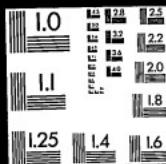


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CENTIMETERS



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Thomas A Edison Papers

**A SELECTIVE MICROFILM EDITION
PART V
(1911-1919)**

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Thomas A. Edison Papers
at
Rutgers, The State University of New Jersey
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18 June 1981

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A Note on the Sources

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**SPECIAL COLLECTIONS SERIES
NAVAL CONSULTING BOARD
AND RELATED WARTIME
RESEARCH PAPERS**

**Naval Consulting Board and Related Wartime Research Papers
Correspondence (1918)**

These folders contain correspondence and other documents relating to Edison's role as president of the Naval Consulting Board (NCB), as well as to his personal research for the U.S. Navy during the final year of World War I. The correspondents include Secretary of the Navy Josephus Daniels; J. Jarvis Butler and W. Strother Smith of the Navy Dept.; NCB chairman William L. Saunders and secretary Thomas Robins; Andrew M. Hunt of the U.S. Shipping Board's Ship Protection Committee; and members of Edison's staff, including his personal assistant William H. Meadowcroft, chief engineer Miller Reese Hutchison, and experimenters Bruce R. Silver at Jones Point, New York, and Samuel C. Shaffner at Key West, Florida. Other correspondents include Harvey S. Firestone, Peter Cooper Hewitt, and officials of the Black Diamond Powder Co., the Ford Motor Co., and the Italian government.

Many of the documents relate to Edison's stay at the naval base in Key West during February-April 1918. The subjects covered include research arrangements, facilities, staffing, expenses, equipment and supplies, and the use of the USS *Sachem*. There are also items concerning Edison's plan to trade coal for Cuban sugar, the development of a hydrogen detector by Selden G. Warner, tests of sea anchors for the rapid turning of ships, and work on smoke bombs and incendiary devices. In addition, there are documents regarding the disagreement among Edison and other NCB members, including David W. Brunton, Frank J. Sprague, and Willis R. Whitney, about the site for a Naval Research Laboratory. Other letters deal with the need for antisubmarine research and a visit to the National Research Council's experimental station at New London, Connecticut, the leading site for such work. There are also a few letters discussing Edison's views at the end of the war. Several documents mention the need to reschedule NCB meetings as a result of the outbreak of Spanish influenza. Among the Edison experimenters represented in the documents are William Deans, Charles B. Hanford, John A. Hanley, Newman H. Holland, Paul D. Payne, and Henry G. Wolfe.

Approximately 30 percent of the documents have been selected. The unselected material includes unsolicited offers, requests, and submissions, most of which received a brief form reply. Other unselected documents include letters of transmittal and acknowledgment, routine interoffice

communications, Meadowcroft's personal correspondence; and test reports, technical documents, and other items pertaining to research projects not directly related to Edison. Also not selected are routine administrative correspondence regarding military service of personnel and documents concerning the production of war equipment by Thomas A. Edison, Inc.

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
January 1918**

January 2, 1918.

Mr. Bruce R. Silver,
U. S. S. Sachem, S. P. 192,
Annapolis, Md.

Dear Mr. Silver:

I am in receipt of your favor of the
31st ultmo, enclosing copies of your correspondence
with Mr. G. A. Richter of the Bureau of Mines Experi-
ment Station, in regard to Oleum.

Inasmuch as your drinck of Oleum has not yet
arrived, we cannot let either Mr. Richter or Mr. Clark
have any. You certainly cannot spur any out of the
small stock which you have at present. As the Boat
is going away so soon, the problem will be solved, as
you cannot let them have the Oleum if you are not there.

I have called up the General Chemical Co.
again this afternoon to ask them if they had any returns
from the telegraph tracer. They say they have not,
but will push it all it is possible. Railroad affairs
are in a chaotic state at present, and it is practically
impossible to get any action on tracers. The General
Chemical Co. told me that the Southern Railway Company
has closed most of its offices and will not take any
action whatever on tracers. This obtains also in
many other railway Companies.

Mr. Edison went back to Washington this after-
noon, and before going he asked me to say to you that
you ought to have a supply of the "best fuse rope". Have
you got plenty of it? If not, please telegraph me to-
morrow where and how much to order, and give description.
At the same time, please say when you expect to get
away from Annapolis.

Yours very truly,

Assistant to Mr. Edison.

Call Address "Edison, New York"

*From the Laboratory
of
Thomas A. Edison,
Orange, N.J.*

January 4, 1916.

Mr. S. C. Shaffner,
U.S.S. Sachem, S. P. 192,
Annapolis, Md.

My dear Mr. Shaffner:

Mr. Edison has taken the Congressional Limited this afternoon. Before he left he asked me to write and say to you that you ought to have several extra Bell 'phones. He requested me to ask whether you had a half-edison extra one. If not, please let me know by wire tomorrow and I will order them. Please give me the number or other trade-name so that I can get the right ones.

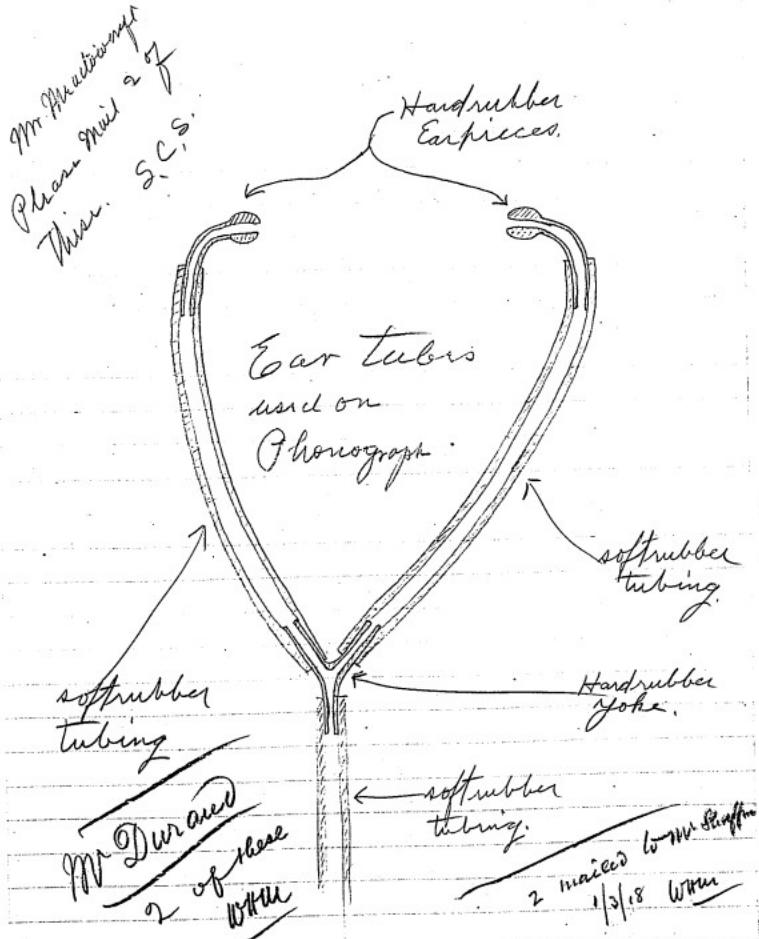
The railway situation has grown to be very bad, indeed, and it may effect your receiving materials for a while. One of the Express Companies has just notified us that they requested their Drivers not to pick up any more Express matter until further notice. This will be undoubtedly followed by others.

I received your note this morning on my desk, and will attend to the matters noted. I am afraid that I have appeared awfully stupid to you in regard to the car tubes, but the boys have used so many different kinds of things I was not sure and wanted to be certain about them.

Yours very truly,

W. H. Gladding
Assistant to Mr. Edison.

A/4265.



[ATTACHMENT/ENCLOSURE]



Ear tubes in use

January 3, 1916.

Mr. S. Naganuma,
c/o Mitsubishi Goshi Kaisha,
120 Broadway,
New York, N.Y.

Dear Sir:-

I am requested by Dr. Suyehiro, to write to you in regard to the Hydrogen Detector which we are making for your Company. I am sorry that I cannot at this moment give exact information as to when it will be finished, but I will try to write you more accurately about it in the early part of next week. The work is being hurried along as fast as possible. Like all other manufacturers in this vicinity, we are absolutely crippled for lack of coal, and have not enough to keep our buildings warm. Therefore, there will be a little delay in the work, and we are hoping to complete the device within the next two weeks if we can get some coal.

Yours very truly,

Assistant to Mr. Edison.

A/4348.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON, President.
PETER COOPER, Vice President.
WILLIAM L. SAUNDERS, Secretary.
THOMAS RODINS, Secretary.

W. R. WHITNEY
GENERAL ELECTRIC COMPANY
SCHENECTADY, N. Y.

January 3, 1917

Mr. Thomas A. Edison,
Washington, D.C.

Dear Mr. Edison:

The following is quoted from Secretary Daniels' report for 1917, page 71:

"With war conditions increasing the need for labor and building materials, it was believed to be a wise policy to defer for a time the building of the new experimental and research laboratory. Such experiments as have been warranted have been made in private laboratories generously offered and at the Bureau of Standards. The need for this establishment, however, is more clearly shown than ever, and its support is urgently advised."

If the support of such a laboratory is urgently advised, we certainly cannot do better than lend some aid. While the bureaus of the Government are doing some of the work of the Navy, there is much of it left undone and much of it is being done by private capital. It is highly probable that, if a site is not chosen before the war is over, Congress will feel itself justified in not permitting new expense at a time when the Government indebtedness will be the greatest in its history.

If we decide on a site, it can certainly be purchased, even tho some of the buildings could not be economically erected at present.

There has been started at New London a plant which is already much nearer to being a Navy research laboratory than we have yet created, and it has grown and is growing like Topsy.. That is probably not the best place for a laboratory, and, so far as we know, no plans have been developed for carrying out at New London much of the work which a Navy laboratory ought to do. The experience there shows, however, how easily a thing of that kind can grow under war conditions. In spite of the cold weather and the ice in the river, they are drawing submarine chasers up on the shore at this plant and installing thru the bottom and on the sides, various experimental devices. This work could be done with much greater efficiency in warmer climates. We think it is safe to say that there will be involved several hundred boats, with a great many experiments apiece, before this class of work is complete, if it ever is, and this is only a very small part of the experimental work we ought to be doing. We ought to have a place where we could install a complete boiler system in an imitation boat hull on land, with powdered coal-making plant, for fuel tests. It is

not fair to ask the Shipping Board to install a new outfit which has not been given adequate test on a boat. We could simulate a boat's body, test such a device, and show the results as easily as by laying up a suitable vessel.

This powdered coal suggestion is only one of a number of the same kind of experiments - experiments entirely unsuited for the Bureau of Standards or even the Bureau of Mines to carry out. Take, for example, storage battery testing in general. The scarcity of submarines makes it almost imperative to build an imitation submarine on shore and carry out the operations of the battery in a space with the dimensions and nature of the submarine, and to build there the suggested experimental devices for removal of gases or practical test of batteries.

In studying the driving engine for chasers and submarines, we have unearthed two new oil engines which ought to be built at once and tested under the requirements of chasers and submarines. One of these was designed by Commander Fisher, of the Navy. Facilities for this work must now be sought in the industrial plants of the country, tho this type of work, limited in application to the Navy's needs, should be carried out in its own shops. A simple low pressure engine, using the standard boiler fuel oil, has

shown members of the Board the apparent possibility of an engine with practical Diesel engine efficiency, but with much greater simplicity, and we are at a loss at present to know how to recommend the suitable making and testing of a complete engine.

In cases like the laboratory site, it is often true that any one of a number is better than no choice. A factory fitted solely for producing submarines, capable of turning one out in a few weeks and located anywhere in the United States, would be a ~~much~~ better laboratory proposition than anything we have produced as a Naval Board, and for that reason, among others, we have been anxious to express preference for any site with unanimity.

The fact that the severity of the winter climate is greatly crippling the work at Nahant and New London and has forced us to send some men south for experimental work, makes it seem as tho the suggested site on the Potomac River possesses a number of practical advantages. As the entire Board would be willing to agree on recommending this site, if you will do so, we were requested to ask you if you would consider it.

Yours very truly,

W. Whitney

January 1, 1918.

Dear Mr. Shaffner:

I was notified over the telephone this morning that the Volt Ammeter was required and ready for delivery, so I have sent a man over for it.

Yesterday I sent you by Parcel Post two of the ear tubes, such as were shown in your sketch sent to me a few days ago. I trust these will be received in good condition.

Please do not think that I overlooked your request for some Laboratory letterheads and envelopes. I regret to disappoint you about this, but it is a very stringent rule laid down by Mr. Edison that our laboratory letterheads and envelopes shall not be used except right at the laboratory, and he never allows us to give any of them out. Even when I was down with him in Washington, I did not carry any laboratory letterheads. If it was desirable to write an official letter, I drafted it and sent it up here to the Laboratory to be typewritten on our letterheads and forwarded to me for Mr. Edison or me for signature in most cases. If at any time there is a special reason why it would be better to write any particular letter on the Laboratory letterhead, you can draft it up and send it here, and I will have it typewritten for you.

I have received a telegram from Mr. Silver stating that you are frozen in and will go out at the first opportunity. It is quite important for me to have an approximate idea, if possible, when you will get out, because I am collecting a lot of supplies which Mr. Edison has specially ordered. These will all be ready to ship by Express on Monday next, the 7th instant. If it will be two or three days before you will be able to get out, please telegraph me first thing Monday, and I will make special arrangements with the Express Co. to put them right through so as to catch you in Annapolis. If there is a reasonable prospect that you will go away before Wednesday night, please let me know, as I would then ship all the things to you best.

With kindest regards to you all, I remain,

Yours very truly,

A/4387.

Assistant to Mr. Edison.

H₂ Dector

The Fulton Company,
Knoxville, Tenn.

Attention of Mr. C. H. Mynderse,
Sales Manager.

Dear Sir:-

I find that we have still another possible use for Sylphones on an apparatus which Mr. Edison is developing for the Navy Department, which contains a delicate pressure gage.

I wish you would be kind enough to send me (4) 2-1/2" x .005" Sylphones like the sample which I have, in order that we may try same out on this device. I would also ask that you make us a charge on these as I do not wish to impose upon your generosity.

Thanking you in advance for your attention, I am

Very truly yours,

CHIEF ENGINEER.

JPC:GAP



HOTEL POWHATAN

PENNSYLVANIA AVENUE-EIGHTEENTH AND H STREETS, N.W.

WASHINGTON, D.C.

Sunday Jan 6-18

My Dear Mr. MacSwain

The car tubes reward etc.
Thank you. I have returned the
large Red and Corp covered cable
we will not need it please store it.

We are on our way to Key West
Monday (Moor, Burns, Hailey,
and myself) will be at Charleston
S.C. To Navy yard Monday & Tues;
We are to get a 140' steamer from
there for Key West. I probably will
go down from Charleston to Key
West by train to Miami.

(2)

arrangements there by the time the boat gets there with the Boys and Material. the Boat is to stay there with us until the Sachem can get out of the Ice in the Chesapeake and get down there. The Sachem is in bound 8" of ice down the bay don't know where it can get out, no ~~regular~~ boats on the bay any place.

Please address us (Huron, Barnes, Hanly & Myself) go Navy Yard Key West Florida. Mr Meekland, Mr Ott, have left us, we doubt there by now. The S.P. 65 has been "let go". All is in fine shape on the Sachem.

I have returned our Roll of wire to the Habershaw Co at Yonkers for their inspection, to see if it is possible for to use it, it is about the limit in roughness and will write the Newyork office to have the head gear from this spool to go to Yonkers and see if relief of so they can see just what was sent up for "high over the finish"

The Weston people have not said a word about the Nutn. Best wishes to all
McMurphy



HOTEL POWHATAN

PENNSYLVANIA AVENUE-EIGHTEENTH AND H STREETS, N.W.

WASHINGTON, D.C.

Sunday 6th Jan -18

My Dear Mr Meadowcroft
Some of your Mee spuds to
Mr White there about Wmting and
Weding badly but could not get
delivery on Wheatstone Brdg. I
told them I had three out home and
would ask Mrs Steffan send two
of them there and sell them for
\$25⁰⁰ apiece (at Wm New \$100⁰⁰
each) When they arrive please hold
them there and if you need one or

both take them and "go to it"

Regards

Aldeleffing

Dear Mr. Meadowcroft:

I have had a couple letters written to you, but before I could get them off they were ancient history. This is written after sending the telegram assuring you that we will not be able to move before Thursday (the very earliest!).

As you have no doubt heard from other sources Mr. Shaffner, Burns, Hauler and Moore, have left for Key West with their apparatus. They go by rail to Charleston and thence by government boat to Key West. As I understand it, they will retain the boat they go in until the arrival of the steamer.

Now with reference to the time of our sailing: As I telegraphed, we will not be able to get under way before Thursday, even if the ice breaks up today. The ice is still about 8 inches thick and while it has been warmer these past two days it doesn't seem to have much impression. It is foggy today and the Captain tells me that fog is pretty effective in breaking it up. After the ice has broken up it will still be a little dangerous to venture down the bay on

account of ice floes. We have occupied ourselves
in stowing our heavy equipment below and
making things secure for a possible rough trip
around Hatteras.

In addition to ice conditions we have to coal
again before starting. 19 tons were reported
this morning, and we have to await the
arrival of a Naval Coal Barge from Baltimore.
This will arrive as soon as they are able
to break through the ice.

This weather condition is certainly unusual,
but there is every indication of breaking up.

I appreciate the fact that Drayz gives you a
problem in sealing the sulphuric anhydride. -
Leave it entirely to your judgement.
I tried a new idea the other day, and would like to
try it out. I can cut down to a one bottle:
(5[#]), The records are a matter of small
importance.

I have some very good news for you
the Oliver has arrived. I am sending the receipt
to the General Chemical Co. as you directed.

- 3 -

I have received the powder pellet from DuPont.
and have ok'd the bill and am enclosing
it. - likewise the bill for Friction Powder
from ~~████████~~ George Auten.

So far the Cordeau from Ensign-Bickford has
not arrived. Please forward that bill as soon
as it does.

With kind regards.

Sincerely yours,

Brace P. Hobson

U.S.S. Sachem, Annapolis. -

Monday January 7

Enclosure - Bill DuPont

Geo. Auten

Not for Harry A with reference to
Fred Otto's break.

No.

421-2

United States Navy Yard,
NEW YORK, N.Y.

JAN 7 1918

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, N. J.

Sir:-

A sample hydrogen detector, designed by you for use in the detection of the presence of hydrogen gas aboard submarines, has been received and tested at this Navy Yard for general suitability for the requirements of the Naval submarine service.

The detector submitted is considered good in principle and accurate and could probably be made mechanically strong enough for service. However, this instrument is not all that can be desired for use aboard submarines.

The type of instrument required is one that is a constant indicator, operating automatically, and constantly indicating on a dial, so that the crew can determine instantly, and at all times, the exact percentage of hydrogen gas present in the boat.

In connection with this indicator, it is also considered desirable to have a setting on the indicator whereby an electrical contact can be made in an alarm circuit. This contact to be previously set at any point desired, always well below the maximum point of the explosive mixture, so that when the percentage of gas reaches, say 3%, the alarm will ring, thus warning the crew that danger exists.

In connection with this indicating apparatus, it has been found desirable to have a standard, non-automatic meter, for the checking of the indicator at intervals. For this purpose the Bureau of Mines standard Burrell tube is at present used.

A very satisfactory indicating instrument of the constant automatic indicating type has been designed by the Bureau of Standards, and has been approved for use on submarines.

The instrument submitted by you will therefore only be considered as a checking standard, and as present designed, answers the same purpose as the Bureau of Mines Burrell tube, which is simple of operation, and accurate enough for practical checking purposes.

In view of the above parts, it is considered that the type instrument submitted is not what is required as a jet detection equipment for submarine use.

Respectfully,

W.H. Patchin
Rear-Admiral, U.S.N.
Industrial Manager,
[initials]

Copy to
W.R.Patchin,
Edison Laboratory,
Orange, N.J.

Mr Edwin
see Warner's report
attached
(Enclosure of)

[ATTACHMENT/ENCLOSURE]

Jan 10th 1917

Mr. Edison:

This report is the same story we were told when we first took our detector to the Navy Yard and at that time we found, after making comparative tests, that the instruments they then had, namely, the Sperry meters and Burwell tubes were absolutely unreliable.

Three different Sperry meters and four Burwell tubes were tried and the readings obtained with all of them were worthless.

The readings made with our instrument were all correct within $\frac{1}{10}$ of 1% and most were within $\frac{3}{100}$ of 1%.

The Bureau of Standards instrument mentioned by Admiral Burd was not completed. At the time we made our tests and they did not know what it would do, it works on the principle of the Sperry meter and according to the drawings it is complicated.

Our instrument may not be all that could be desired but it is accurate, reliable and simple and furnishes a dependable method for determining the percentage of hydrogen in a submarine.

Readings accurate to $\frac{1}{10}$ of 1% can be obtained in one minute. Warner.

Mr. Edison: I guess Burd simply signed a letter written by some subordinate. He is no right himself not to realize how good the Hydrogen Detector is.

*W.W. I -
Experimental Work*

CARNEGIE INSTITUTION OF WASHINGTON
WASHINGTON, D.C.

OFFICE OF THE PRESIDENT

January 7, 1918.

Thomas A. Edison, Esquire,
Room 502, U. S. Navy Annex,
Washington, D.C.

My dear Mr. Edison:

Permit me by this letter to introduce to you Mr. Daniel M. Wise, one of the engineers of our Department of Terrestrial Magnetism, who has been assigned to assist you in the computing you contemplate. He is a man of unquestioned loyalty to the U. S. Government and I think he will be able to give you the assistance desired. In case some special additional work to that contemplated arises, he will probably be able to draw on his colleagues in the Department of Terrestrial Magnetism for any service or information that may be available in the Department.

I need hardly add that the services of Mr. Wise will be given gratuitously.

Faithfully yours,

Robert S. Woodward

Charleston S.C., Jan'y 8th 1918

Dear Mr. Meadowcroft.

We arrived here "8th" with all the material Monday Morning. We get the S.P. 198, 15¹/₂ foot, steam converted yet. (Repose 2¹/₂ m.) We start for Navy Yard Key West Florida Thursday 10th will be in Key West about Sunday. I may go by rail to make arrangements for the boat when it gets there.

Please order the following for us.

Western Electric Co

New York N.Y.

attention Mr. Gold

2 = ~~new~~, ~~old~~ hand telephones wound 200 ftms. ✓
40 = " " " about 80 "

Address us

Hanley, Barnes, Mom and Myself

to Navy Yard

Key West
Florida

(2)

From Laboratory

- 1 = 0pool No 36. = S.S. covered copper wire.*
1 = " 37. = " " "
1 = " 38. = " " " "

5. Hale solution for replenishing the liquor of the from Battery

From Electrical World. No. 2

- 1 = copy of first book on "Amplifiers" on Oscillators] ask Mr
 1 = " " " " Electric Magnets. } bold of Dr
 Latest editions } Jewett often
 John Mills - Radio Communications. Weston Electric
 451

From Weston Electrical Inst Co

Newark N.Y.

We have been unable to get any definite from them about the water we sent them for repair, and must have one at once. This instrument was purchased from them by us about July 17 and must have a record of it there in the office. We see it on one like it shown in Amp. 1.5 = 3, = 30. Both 3 & 15 = 150.

late model.

4 pieces of best Magnet Steel about $\frac{1}{4}'' \times \frac{3}{4}'' \times 8''$ long till then
this steel is for Special Magnet work and will write them up
long to suit and Magnetize them here. $1\frac{1}{2}'' + 1\frac{1}{2}'' + 8''$
any size *Brigby* Mr Goodwin

JOSEPH HEREDITH ROSENCRANTZ
GENERAL DIRECTOR

THE FRANCIS-ROSENCRANTZ MULTISHOT GUN MAGAZINE
100 PER CENT. INCREASE CARTRIDGE CAPACITY

ADAPTABLE
FOR ALL STANDARD FIRE ARMS
USED IN THE ARMIES AND NAVIES

OF
UNITED STATES
ENGLAND
FRANCE
ITALY

328 WEST 96TH STREET

NEW YORK

January 8th, 1915.

Honorable Thomas J. Edison,
Chairman Naval Advisory Board,
Washington, D. C.

(@ Rosecrantz
Let me know)

My dear Mr. Edison;

Inspired with a hope that this message, true in every essential, will be given your kind and immediate attention, I have taken the liberty to acquaint you with a matter that I believe will surely interest you.

Through the courteous suggestion of Mr. J. Pierpont Morgan that I advise official Washington of an improvement of vast importance to the modern small firearm, I beg to submit to your serious consideration a gun magazine that doubles the cartridge capacity of any standard gun in the world today without enlarging the dimensions of the gun. I know this appears incredible but this claim can be proven by producing a regulation stock gun using this magazine that will fire double the gun's usual capacity with the same caliber bullet.

Now, Mr. Edison, I trust it will be your pleasure to grant me an immediate authorization to present this matter to the proper authorities.

Assuring you of my deep appreciation for your kind attention given this letter,

I am, Sir,
Yours most respectfully,
John Francis Rosencrantz

CABLE ADDRESS
"BISGUTPER"
NEW YORK

BISHOP GUTTA-PERCHA CO.



INSULATED WIRE AND GUTTA-PERCHA GOODS

420 TO 430 EAST 25TH STREET

NEW YORK. January 8th 1918.

Mr. S. C. Shaffner,
c/o Thomas A. Edison Laboratory,
Orange, N. J.

My Dear Mr. Shaffner:-

Your favor of the 4th inst., received and am pleased to advise that we would be able to make up a cable such as you suggest with an insulated steel center and surrounded with wires separated in such a way as to give three or four separate conductors on the outside. This could be again insulated so as to be about the same diameter as the cable which we have just shipped you, and I think could easily carry three or four currents on this cable.

When we made up the first lot of cables for you, we made three cables, two of which we shipped with the blue rubber on the outside, the other cable we have braided with a hard finish fine cotton, and are having same covered with varnish. I thought it might be well for you to try this out, as it is quite possible that it will draw through the water easier than what we furnished. This cable will be ready tomorrow and I would like very much if you would advise me where to ship it.

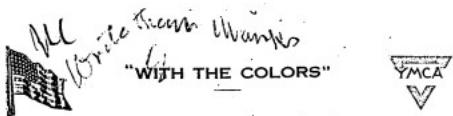
Hoping for an early reply, I beg to remain,

Yours very truly,

BISHOP GUTTA PERCHA COMPANY.

By *Henry D. Reed*
Vice President.

HDR G



Charleston S.C. 19.18

Dear Mr. Eaton

We expect to leave here
tomorrow for Navy Yard Key West.

The 5th 1918 Repoco II. will under
going repairs where we are now. The
annoucement to Rear Admiral Bryant
and Commandant Bryant that you
wanted the boat. They gave orders that
all stand by put on the repairs, and
get the boat completed, and to all and
let us have any and all assistance.

The great esteem and personal
admiration for you caused them to
put three sailors out of their way, even to
the extent of Commandant Bryant calling
on me and rather insisting that I
come and stay at his home until



"WITH THE COLORS"

(2.)



He could get the best society,
They have showered all kinds
for favors on us. on account of
you. What I had in mind was
the only way we can show our
affection is for you to write them
each a short note expressing a
reciprocal good will and affection.

Rising Sun
M. D. Coffey



W.M.FULTON, PRESIDENT
BROWN PROSSER, VICE-PRES.

D
1918

Torval Consulting Bd.

JNO.S.BROWN, TREASURER
W.P.TOMS, SECY & GEN. MGR.

THE FULTON COMPANY

KNOXVILLE, TENN., U.S.A.

January 9th 1918.



S.G. Warner
Note

Zellars wife

Mr. John P. Constable,
Chief Engineer,
Thomas A. Edison Laboratory,
Orange, N. J.

Dear Sir:- Acknowledging yours of the 5th, and
for the attention of Mr Mynderse, beg to advise that
Mr Mynderse is now in New-York attending Automobile
Show. However we note what you say in regard to
sending you (4) $2\frac{3}{4}$ " x .003" Sylphones like sample
you now have, and wish to advise that we have
placed this with our Order Department and with
instructions to let these go forward immediately.
Assuring you that the above will have our usual
prompt attention. Thanking you, We are.

Yours very truly
W.D. Eells,
Sales Department

WDE/LP

Note that in soldering them
great care must be used to
remove all traces of soldering
acid - neutralize or boil after soldering
otherwise shell will eat them HC

GENERAL ELECTRIC COMPANY

RESEARCH LABORATORY
SCHENECTADY, N.Y.

Headocraft-

Write Whitney & ask him to come + see me
January 9, 1918.
next time he comes down to meeting
Mr. Thomas A. Edison
at 10 East 45th St or 22nd
Washington, D.C.
Dear Mr. Edison: go over the laboratory of Mallin

I am sending you a letter ~~been~~ the 3rd inst.
which I had sent to Mr. Saunders, thinking that he
and Mr. Hewitt might be willing to indorse it and
bring it to you last Saturday. I was unable to be
in Washington that day. Apparently this letter
reached Mr. Saunders too late for him to make use
of it, but he suggests that I send it to you as a
personal letter, which I hereby do.

Yours very truly,

W.H.W.:B

W. C. Rutherford

4475

To Mr. Meadcroft:

Your letter of January ninth
received. It is quite lame one aboard,
but I have managed to keep busy,
and will now be more, now that it is
being arranged for me to work in the
Academy Chemical Laboratory until we get
out of the ice.

Was in Washington Sunday night
and Wednesday with Mr. Edison, had
a conference with Admiral Earle and he is
shipping all over himself to have guns
ammunition etc. ready for us at Key West.

We are still "up in the air" as to when
we will get out of the ice. Learned in
Washington yesterday that a Cruiser had
been sent up the Chesapeake to break out
the grain shipment from Baltimore.

I find today that she is aground above
Des Moines. - I desire to keep you
informed of the present. Traffic on
the Potowmack, I understand was removed
yesterday.

Mr. Edison appears to take our
peculiarly, and I think, rather
expects that we will be held here a
week or so more. I hope we can get
away before though!

I have received the air brush,
Mr. Spofford's Country records and another
package for him by parcel post. He asked
me to hold them aboard for him.

The Cardew from Eugen-Bickford
has arrived, and I am enclosing their
O.K'd bill. I have also received an
express box from Mr. Spofford, and a box

addressed to me . with Camp Black etc.

On the eighth instant I received
the final statement in our order from
H. Lynn and Son of Baltimore.

A recent order has gone into
effect which will affect us. in reference
to telegrams. No telegram addressed
to a ship will be delivered; for instance
if you telegraphed me. U.S.S. Sachem
S.P. 192 Minneapolis, Mary Paul -

it would not be delivered. The proper
way to address it would be
U.S.S. Sachem S.P. 192, Care of the
Bureau of Navigation, Washington, D.C.
It seems more or less foolish in this
particular case but these orders are orders.

Now that F. Ott has gone with his
responsible tool chest, we find that
we need more than ever before,
- a few of the more common tools.

So far on the trip we have used
tools belonging to individuals,
it would be much better to have
a small set of tools for the use
of everyone, I think you will agree.
Here is a suggestion last.

One Wood Saw. -

One Plane (smalld).

One Chisel (Woody)

2. Screw drivers (one smalle, one medium).

One Hack saw. - (We have blades)

One pair medium size pliers.

2 Wire cutters, smalle + medium.

One Claw hammer

These could be shipped along with any
shipment you might be sending down
to Key West.

My questionnaire came and I had
Mr. Edison sign it. I think I had
gone over with you the usual
form of stating the nature of our work
but with Mr. Edison's help I think I made it
quite OK. I expected that they
would send the blank to the Substation
as I asked them to do in a letter,
but I heard nothing from it. It will
be in existence at any rate. - I wonder if
it is not held up in the mail.

That's fine that you were able to
get the diphenoxy anhydride off to me.
Thanks.

- 6 -

I think there's something about something..

With best regards!

Aincerely yours.

Bruce R. D. L.

M.S.S. Salem, S.P. 192-

Annapolis, Maryland

January 16th 1917.

U.S. SHIPPING BOARD BUILDING
1310 F STREET NW.

UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
WASHINGTON

file
Thomas A. Edison, Esq.,
Navy Annex, Navy Department,
Washington, D. C.

January 12, 1918

My dear Mr. Edison:

In reply to your memorandum of January 8, submitting particulars of a multiple drill press, invented by Mr. Aaron Hill, I wish to thank you for calling this matter to my attention.

It appears that this press should be very useful to ship fabrication, and the Corporation has written to the three large fabricating yards, giving them the information, and suggesting that they go into the matter further with Mr. Hill.

It does not appear practicable for the Fleet Corporation to undertake the manufacture of this drill press, as it is a matter that can better be handled by the shipyards themselves.

Very truly yours,

Edmund Rousley
President

*Chairman
President Board of Trade*
✓ Feb. 1915

January 14, 1918.

Mr. B. R. Silver,
U.S.S. Sachem, S.P. 102,
Annapolis, Md.

Dear Mr. Silver:

I intended to reply to your letter of the 10th instant last Saturday, but somehow or other did not get to it. However, I will reply now, and in the first place, want to thank you for your budget of news.

I am going to comment on your letter in the order in which you write. I am glad to learn that Admiral Earle is hustling to have guns, ammunition, etc. ready for you at Key West. Evidently there has been something stirred.

I am sorry you are still tied up in the ice, as I am sure you must be impatient to get down to warmer climate where you can get into active experiments once more. It is to be hoped that you will soon be able to pull out.

Your remarks in regard to addressing telegrams care of the Bureau of Navigation, are duly noted. It seems a little foolish, but then it is a great deal better to be on the safe side, and just as well not to let the Dutchmen know the movements of our boats.

Now in regard to the few tools that you want, I have been thinking the matter over, and it seems to me to be more common sense to let you run up to Baltimore and buy the list of tools that you specified in your letter. I presume you will have enough cash to pay for them, and you can send in to Mr. Kellaw a cash account including these and I will O.K. and tell him I told you to do it. If we buy them up here and send them down, we may not get just exactly what you want. So please go ahead and buy them yourself.

I am glad to learn that your Questionnaire has been taken care of, and hope that it will turn out all right. I hope you have received the sulphuric emphydride, and also the case of blue Amberol records which was shipped to you last Friday.

With kind regards to you and to Captain Patton, I remain,

Yours very truly,

January 14, 1918.

Mr. Thomas E. Edison,
Room 502, Navy Annex,
Washington, D.C.

My dear Mr. Edison :

After looking this whole situation over
with Commandant Traut, and at his suggestion, I write
the following facts :

This Navy Yard, containing about 21 acres
on the edge of the city, is a "beauty spot" with palms,
flowers, walks and well kept buildings. On the city side
of the Yard is a high iron fence with two gates, well
guarded by Marines. No one is allowed inside but Govern-
ment people, leaving the whole Yard free to move in, in
privacy.

On the other side of the Yard are fine
wharves with deep water all private and within the Yard
gates.

They have a fine machine shop with lathes,
shapers, planers, drills, grinders, small tools and ap-
parently ten or fifteen good machinists. A good foundry
with several molders. A wood working shop with tools,
machines and stock of material. They have a stock of
material such as rods, tubes, sheets of various sizes
and thicknesses. In fact it looks like they have every-
thing anyone could ask for in the metal and wood lines.

Commandant Traut lives in a beautiful home
within this exclusive enclosure, an ideal family and home.

The docks are ideal and through his ef-
forts we have arranged with the Lighthouse Dep't (in the
center of the docks and yard) a slip to put our boat, and
the use of a part of their warehouse to store our unused
or surplus material.

They have a good fort and grounds practi-
cally on the grounds which can be used for any purpose you
may want.

Commandant Traut suggests that you could get the use of the Lighthouse tender a good part of each month if you needed it, or some of the smaller ones. Several of the larger government ships are in here (I don't think it prudent to describe in writing).

What I had in mind was that if the Sachem is still tied up and you want to ship the material from it down here and come on down, I am sure you can work all your work here at once with the boats and other facilities here. The weather, land and water conditions are ideal here.

The Reposo II wired they had to stop Saturday at Brunswick, Ga. on account of a severe storm. Expect them tonight or tomorrow.

Commandant Traut asked the diameter and other dimensions of the brotherhood torpedoes you expect to ship here, so he can see if he has a boat with the proper size tube.

Very respectfully,

FELIX WILCKES, PRES.

LUTHER MARTIN, VICE PRES.

FERD. WILCKES, TREAS.



WORKS: CAMDEN, NEW JERSEY.

Capacity: { 1902 3,000,000 lbs.
1905 6,000,000 =
1910 10,000,000

CABLE ADDRESS: BEARPHOS
4TH & 5TH EDITION, A B C & LIEBER'S CODES

THE LARGEST MAKERS OF FINE LAMP BLACKS IN THE WORLD

WILCKES MARTIN WILCKES CO.

MAKERS OF THE FAMOUS



135 WILLIAM STREET,

CARBON GAS BLACK

GRINDING PLANT

IVORY, BONE & DROP BLACKS
MINERAL BLACK
AND MORTAR COLORS

NEW YORK. Jan. 14th, 1910.

Thomas A. Edison,
Orange, N. J.

Gentlemen:- Attention Mr. L. P. Ott.

Your valued inquiry of the 12th received, and as per your request we are enclosing you three samples of the deepest blacks we have, viz. our "T" Carbon Black; No. 35 Ivory Black and No. 5 Lamp Black. You will also note there are three distinct blacks obtaining from different bases, viz. "T" Carlton Black from natural gas; No. 35 Ivory Black from Bone and Lamp Black from oils.

Trusting you will find one of these suited for your purpose, we remain,

Yours very truly,
WILCKES MARTIN WILCKES CO.
L. P. Ott
VICE PRES.

L.M.F.

Retained a copy of this letter
L. P. Ott



WILLIAM LOVATT

-INVENTOR OF-

The Lovatt Piston Packing Rings

216 Broad St., GREENPORT, L.I., N.Y., Jan 14, 1918
Hon Mr. McEwan

Dear Sir

when you was in greenport
i give the tool maker that was with you i think he
is the same man that was in the tool ^{now} as foreman
when i worked for you in Georick St City i give him a
letter that i got from washington as had come from
your board of investigation in regards to my Doctor
Lidderdale's distress & asking him to give it to
you did he give you the name i tried to see
you but could not that night that i recd your
letter now if you get the letter would you be so kind
as to inform me what action you are taking in regard
to my invention for i consider it can't be beat
in all the appliances that i have heard till
off i have written to Secretary of the Navy asking
him for information he never got any reply

P.D. i worked respectfully WM. LOVATT,
for you under Mr Dean 216 Broad St.
V McDougall Greenport, L.I., N.Y.

Cable Address "Edison's New York"

*From the Laboratory
of
Thomas A. Edison,
Orange, N.J.* Jan. 15, 1918.

Mr. S. C. Shaffner,
U. S. S. *Reposo* II - S. P. 198,
Navy Yard,
Key West, Fla.

My dear Mr. Shaffner:

Just a line to let you know that your various requirements are receiving attention. Up to date, your unfilled orders are as follows:

| | | |
|---|--------------|--------------------------|
| 1 | Spool No. 36 | S.S. Covered Cable Wire; |
| 1 | " " | 37 " |
| 1 | " " | 38 " |

5 Gal. Solution for replenishing Storage Batteries;

1 Book on Amplifiers or Audions;
1 Book " Electro-magnets;

2 Hand telephones 200 Ohms;
4 " " 80 "

4 Pieces of best magnet steel, 1/4" by
3/4" by 8 inches long.

They did not have any 5/4" width, and the only thing I could get was 1/1/4" instead of 5/4" measurement. You will simply have to have it cut to size with a metal saw, which they will probably have in the Machine Shop in the Navy Yard.

All these orders are receiving attention, and we shall begin to make shipments in a few days. We could not get them immediately.

I trust the Voltammeter reached you in good order, and also that the Boat made a good trip down to Key West.

With kind regards to you and the boys, I remain,

*P.S. I am sending down by parcel Yours sincerely,
Post Hopkins Experimental Science. W. H. Meadowcroft*

January 12, 1910.

Mr. B. R. Silver,
U. S. S. Sachem, S. P. 192,
Annapolis, Md.

My dear Mr. Silver:

I received an order from the Bureau of Mines calling for 100 pounds of oleum for the American University Experiment Station, Washington, D. C. I sent this down to Mr. Edison to see what he wanted me to do with it, and he says to let them have it. I did think of telegraphing you, but probably you have not gotten out of the ice yet and will send this letter expecting that it will catch you in time enough. I am sending the order, which please return to me, as we shall have to make out a bill on the Government blanks.

I think you had better get in telephone communication with Mr. Clark or any one you know at the American University Experiment Station, and tell them they can have the Oleum. I do not know how you are going to ship it, as the Express Company regulations are so stringent that they will not take it. I think that you had better put it up to the American University Experiment Station to send and get it, so that we do not take any responsibility.

If you have such a thing as a small iron drum that will hold a 100 pounds or more, you could put it in that, and they could send an automobile after it. If not, I suppose they will have to send several men with stone cider jugs. These are only random suggestions, but you will see my idea is to get away from responsibility.

I think you will have to urge upon them immediate attention, as you may be going away soon.

With kind regards to you, I remain,

Yours very truly,

Assistant to Mr. Edison.

Enclosures.
A/4464.

*W.W. I -
Experimental Work*

January 15, 1918.

Mr. Edison:

Regarding the Lamp Black requested by Mr. Silver,
I have six lamps going, and will start more. Can send
half-pound today.

In reference to Lampblack from other concerns, I
personally went to several concerns and they promised me
one-pound samples of the deepest blacks which they have.
Binney & Smith promised one-pound samples for Monday, and
as soon as they are received, I will forward them to the
Boat. Herewith am sending you some small samples re-
ceived from Wilckes Martin Wilckes Co., New York.

L. OTT.

U. S. S. SACHEM

Annapolis, Md.
January 15, 1918

Mr. S.J. Shaffner
Key West, Florida.

My dear Mr. Shaffner:

Yours of January 10th received and glad to know you have found a good boat but imagine you will be rather cramped for room comparing the *Reposo* to the *Sachem*.

Hope by this time you have reached Key West and settled down to business. Am sorry to say that we are still frozen in solid with seven to eight inches of ice and has, at the time of writing, every indication of another northeast gale. We've had two warm days but the ice did not melt to any appreciable amount. All the vessels in the yard have been very short of coal but expect six cars in this afternoon so will fill up to capacity, plus deck load, and be ready for the first chance to break through, as you know we are to pick the screen at Cape Lookout and then go to Norfolk for powder and projectiles for 3" guns. Mr. Edison has been promised a 3" gun to be delivered to us on arrival at Key West. I think we will all be satisfied to get away from here as time is beginning to hang pretty heavy. During the past week the Government sent a battle ship up to Baltimore to break a passage through the ice for a fleet of steamers. Have forwarded your mail and a package, as per instructions.

Drop me a line, now and then, as to how you are progressing and I will keep you posted from this end should anything turn up. Best regards to all of the Edison party, I remain

Truly yours,

Jn. Paxton

Telegram

Jan 16, 1918

Bruce A. Silver,

S. P. 192

Bureau of Navigation

Washington, D. C.

Just received urgent letter from
H. H. Beebe, Experiment Station,
Washington American University,
Washington about oleum. I have
wired him to see you. Do everything
you can for them. I wrote you
yesterday. ~~This~~ You might try get
him on telephone.

W. H. Meadowcroft

Postal 1/16/18
10.15 a.m.
W.H.M.

Telegram

Jany 16, 1918

H. H. Beebe

Bureau of Mines Experiment Station
American University
Washington, D. C.

Your letter ~~MAILED~~ just received. Oleum is on board vessel S. P. 192 at Annapolis. She will leave as quickly as she can get out of ice. Express Company will not carry oleum. We suggest you go to vessel immediately and see Mr. Silver who has been authorized to supply the material to you.

Postd J. 16/18 Edison Laboratory
10.15 am WDC

January 18, 1918.

Mr. William Lovett,
116 Broad Street,
Grotonport, N. Y.

Dear Sir:

Replying to your inquiry we beg to say that Mr. Edison is away from home and we do not know when he will return.

We have no idea whether or not he received the letter about your submarine Destroyer, but if he did he would probably refer it to Mr. Thomas Robins, the Secretary of the Naval Consulting Board. The address of Mr. Robins is 13 Park Row, New York City.

Yours truly,
Edison Laboratory.

January 18, 1918.

Bilwood Irvine Tube Works,

Oak Lane Station,

Philadelphia, Pa.

My dear Mr. Evans:

Do you suppose you can sandwich in a little work in connection with something Mr. Edison is doing for the Government? It is not in quite such a hurry as the last job you so kindly did for him. This time he would be satisfied if you could make delivery in four weeks.

What is wanted is the following:

| <u>Inside Diameter</u> | <u>Outside Diameter</u> | <u>Material</u> | <u>Quantity</u> |
|----------------------------|-----------------------------|-----------------|------------------------|
| 11/16" | X | 13/16" | Seamless Brass Tubing |
| 1/4" | XX | 3/8" | Seamless Brass Tubing |
| 1" | X | 1 1/16" | Seamless Copper Tubing |
| 13/16" | X | 7/8" | Seamless Copper Tubing |

If you can do this please go right ahead, and I will send formal Purchase Order on hearing from you.

Mr. Edison is still hard at work, day and night, for Uncle Sam.

With kindest regards, I remain

Yours sincerely,

As
Assistant to Mr. Edison.

COUNCIL OF NATIONAL DEFENSE

WASHINGTON

The Storage Committee
War Industries Board
5216 New Interior Bldg.,
January 18, 1918

Mr. Thomas A. Edison,
Hotel Powhatan,
Washington, D. C.

My dear Mr. Edison:

My friend, Mr. Charles Day, who sits on the War Council of the War Department, has recently returned from the other side, and brought with him, from the British Ministry of Shipping the latest approved disks of flush paint-work for seagoing craft. He visited the Clyde, and saw this work in all different stages of development, and discussed with the representatives of the Ministry of Shipping the various other steps now being put into force for camouflage purposes. It has occurred to me that you might like to see these disks, and perhaps have Mr. Day give you some of the recent data with regard not only to shipping losses, but with regard to submarine losses and about the shipping situation.

Mr. Day usually stays at the Powhatan, and will be very glad to show you these exhibits if they are of any interest to you.

Yours very sincerely,

M. L. Cooke

Chairman of the Storage Committee

MLC/S

January 11, 1918.

Dr. W. K. Whitney,
Research Laboratory,
General Electric Company,
Schenectady, N.Y.

Dear Dr. Whitney:

I have received this morning from Mr. Edison, a memorandum in relation to your letter to him of the 9th instant, concerning the letter which you had sent to Mr. Saunders, about the Experimental and research laboratory.

Mr. Edison requests me to write to you and ask if you will kindly call in and see him the next time you go down to a meeting in Washington, and he will go over the laboratory matter with you.

In case you do not know where to find him, let me say he is in room 502 of the Navy Annex Building, New York Avenue and 18th Street. He is staying at the Hotel Pennsylvania, but spends all day and evening down at the Navy Annex.

Yours very truly,

Assistant to Mr. Edison.

A/4475.

Washington D. C.

Jan. 21, 1915.

My dear Mr. Shaffner,

Incline please find a letter which Mr. Elkin
directed me to send you - it also inclose a copy of the answer he
made to the letter. I sent the letter and then had it typed written
to send to Admiral Smith, thought you would like to see it. It is
only the first rough draft you can dating it when you have
read it. He received your radio today about the Reparation
being sent at Miami and hoping to get away today. Capt.
Rector and Elkin were here tonight and have gone back to
Montgomery. They hope to get away soon but the weather
still keeps cold here from 18° + 20° alone here all day.
We are all well and hoping to join you in Florida soon.

With best regards I am

Sincerely yours,

Charles B. Maynard.

[ATTACHMENT/ENCLOSURE]

✓

W. Struther Smith,
Officer in Charge of the Navy
Washington, D. C.

Jan. 21, 1918

My dear Mr. Smith: In reply to your letter of today in
regard name of my assistant now at Key West I would
say that Mr. S. C. Sheffner is in charge of my experiments
~~from you~~
there - He is the only one who has the authority to represent me.
He has several men under his direction, but in Mr. Sheffner
alone rests the responsibility for my interests there.

W. W. T - Work

Address reply to:
CHIEF SIGNAL OFFICER OF THE ARMY,
Washington, D.C.

RADIO DIVISION

WAR DEPARTMENT
OFFICE OF THE CHIEF SIGNAL OFFICER

WASHINGTON January 21, 1918.

From: Office of the Chief Signal Officer. CONFIDENTIAL

To: Mr. Thomas A. Edison, Navy Annex, War Department,
Washington, D.C.

Subject: Special Radio Transmitting Station.

1. Referring to your recent conversation with Captain Sheppard, Radio Division, regarding the possibility of producing sufficient interference to prevent submarines in the English Channel from communicating with their bases in Belgium and in Germany, without at the same time prohibiting the operation of Radio stations on the French front nor communication between friendly ships. This problem has been given careful consideration and it is believed that certain methods and equipment of the Signal Corps may be modified and adopted in such a manner as to provide a solution.

2. If it is found to be desirable an officer can be detailed to give this question his undivided attention.

3. The nature of the problem is such that the co-operation of the Navy will be necessary in carrying out practical tests.

By direction of the Chief Signal Officer of the Army.

Hughes & Daugherty
Lt. Col., Signal Corps.

Reut to me
Key West
Canary Islands

Mr. Edison:

You asked me to have
made 2 lbs of our lampblack,
and also get 5 lbs Commercial -

I now have 1 lb of ours
ready to send.
Where shall I send it?

To the boat at Key West or
do you want it in Washington?

The Slocum was still
ice bound last Friday, but they
expected to get her out by the
beginning of this week.

Meatoverly

Jan 22/18

[ATTACHMENT/ENCLOSURE]

2

Stael rod

| | |
|--------|---------------------------|
| 20 ft. | $\frac{1}{4}$ inch alcant |
| 20 | $\frac{1}{2}$ |
| 20 | 1 inch |
| 10 ft | 2 " |
| 4 | 3 " |

3 or 4 ft
length
parallel
long box

75 lbs of floor plate scrap

This is from used for matching
It is 15

Moret + Mells very easy
Richardson Recitation Center

W.H. Steers works can

bifurcation set =

tell R&B that you want it van

Low MCP-4 its for Great Expectations

[ATTACHMENT/ENCLOSURE]

M J.A.E

2 lbs of ~~delacally~~ (burned)
Lining 80% inside of
calorant only = 6 weeks & +
put in several bottles or Tin cans
5 lbs of ~~commercial~~
~~lanceolate~~

[ATTACHMENT/ENCLOSURE]

4

Should have a supply of
test pieces ~~to~~^{using} ~~the~~ Silver
if he has it,

Should have several
extra Bell if possible.
~~wire~~ Shaffner if he has
1/2 doz 3x100, 1000 ohms

No. this is nothing but Regular shell made blunt.
it cuts & bounces in all kinds of directions.
sinking & exploding is not intended to hit a target
It was used by English in 1916

Diving Shell, Perfected by U. S. Deadly "Sub" Weapon

WASHINGTON, Jan. 22.—The "non-bouncing" shell, a weapon as deadly as the depth charge, is the newest device perfected by the Navy ordnance experts for use against German submarines.

The new shell dives when it strikes the surface of the water, instead of bouncing, as do the ordinary mines and depth charges used in either naval or coast defense artillery. In addition, through the use of a new fuse, the charge can be exploded at a pre-determined depth.

The value of the latest anti-subma-

nine weapon lies in the fact that shots which fall slightly short will be of as much effect as those which register direct hits. Passing upwards beneath the water, the shell will explode against the side of the submarine's hull.

When shells are aimed at a periscope of a submarine, headed bow-on, there is a material increase in the chances of a successful take effect, since

the hull

The navy department has followed the public interest during the invention, but it is known that the British and French admiralties also have adopted it.

Newark Star Eagle - Jan 22, 1918

DIVING SHELL FOR USE AGAINST SUBMARINES

Doesn't Bounce When It Strikes Water but Cuts Under—Explodes on Contact With U Boat.

WASHINGTON, Jan. 22.—The "non-bouncing" shell, a weapon as deadly as the depth charge, is the newest device perfected by the Navy Ordnance experts for use against German submarines.

The new shell dives when it strikes the surface of the water, instead of bouncing, as do the ordinary methods used in either naval or coast defense artillery. In addition, through the use of a new fuse, the charge can be made to explode on contact with the surface under the water or at a predetermined depth.

The value of the latest anti-submarine weapon lies in the fact that shots which fall slightly short will be of as much effect as those which register direct hits. Passing upwards beneath the water, the shell will explode against the side of the submarine's hull.

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the hull

British and French Admiralties also have adopted it.

BIRD FIGHTING STRENGTHENED.
Gull Attacks English's Audubon.
A STORMY DAY.

N.Y. Evening World
Jan 22, 1918

Mr. Edison

It looks as if our
friend Admiral Earle had been
getting busy on your under water projectile.

Meadowcroft

January 22, 1918.

Hon. Newton D. Baker,
Secretary of War,
Washington, D. C.

Dear Sir:-

At Mr. Edison's request, I am sending to you our Laboratory bill for experimental work performed for the War Department over the period from August 1, 1917 to December 2, 1917, at cost, amounting to \$3,096.68.

This bill is in the same form as is usually rendered to the Secretary of the Navy. Formerly I used to send those bills direct to Secretary Daniels, but later on he asked me to send them to his assistant, Rear-Admiral W. Broder Smith.

Shall I continue to send those bills to you, or would you prefer to have me send them to some person in your Department, whom you would wish to designate?

Yours respectfully,

Assistant to Mr. Edison.

A/4497.

Enclosures.

January 22, 1918.

Honor-Admiral W. Strother Smith, U.S.N.,
Navy Department,
Washington, D.C.

My dear Admiral:

This is the first time I have had
the pleasure of addressing you by your new title.
It was my intention to extend my sincere congratula-
tions upon your promotion, but I have been awfully
busy, and somehow the matter slipped my mind. How-
ever, I want to congratulate you now.

Herewith I hand you the Laboratory state-
ment of experimental work covering the period from
November 1, 1917 to December 6, 1917, at cost, amount-
ing to \$1,310.81. Your usual kind attention will
be appreciated.

Yours very truly,

Assistant to Mr. Edison.

A/4496.

Enclosures.

ELLWOOD IVINS TUBE WORKS
ELLWOOD IVINS, PROPRIETOR
OAK LANE STATION, PHILA.

NEW YORK OFFICES: 200 FIFTH AVENUE **CHICAGO OFFICES: 128 WEST LAKE STREET**

Thomas A. Edison,
Orange, N. J.

For the Attention of Mr. Meadowcroft, please. *Received from [unclear]*
OAK LANE STATION, PHILA., January 22nd, 1918.
about *[unclear]* *Wednesday*
Tuesday,

All Contracts, Agreements, and Statements are subject to the approval of the Proprietor, by written signature. Contracts, Agreements, and Statements may be terminated at any time by either party, by mutual agreement, or by notice of termination given in writing to the other party. It has been agreed that either party should cause our examination and/or treatment of the Tubes as specified on your original order of number, name, and address. Under no circumstances are we liable for damage to your Tubes if they are returned to us in the original length when they will be replaced. We reserve the right to replace all Tubes returned to us if they are not in the original length when they will be replaced. If you are not satisfied with the quality of the Tubes, you must specify exactly on your original order, the quantity you want replaced, and the quantity you want sent back to you. Your order is ENTERED AND ACCEPTED IF IT IS WITH THE ABOVE UNDERSTANDING.

TOPIC: YOUR ORDER #129470

We are pleased to enter this order for the following
Seamless Tubing.

15 lbs. Seamless Brass tubing 23/32" O.D. x 21/32" I.D. x 1/32" Walls at twenty-seven (27) cents per foot net.

30 lbs. Seamless Brass tubing 3/8" O.D., plus or minus .002", x 1/4" I.D., plus or minus .002", x .062" Walls at twenty-four (24) cents per foot net.

40 lbs. Seamless Copper tubing 1-1/16" O.D. x 1" I.D. x .031" Walls at thirty-five (35) cents per foot net.

15 lbs. Seamless Copper tubing 7/8" O.D. x 13/16" I.D. x .031" Walls at thirty-one (31) cents per foot net.

These prices are for random mill lengths, f.o.b. our works and with boxing at cost. Terms, 1% ten days, net thirty days from date of invoice.

We will do our utmost to have this tubing completed and ready for shipment within four weeks as you request. Shipment will be forwarded by Express, to Newark, N. J., and case will be marked for Mr. Meadowcroft.

Will you please advise us immediately whether you wish this tubing finished stiff and rigid, or soft and pliable. This information will greatly assist us in sending tubing that will fully meet your requirements.

Your order is entered with the above understanding. If not correct, advise by return mail.

We thank you.

HK-
Sten. #9.
EG.

Very truly yours,

Forace Kircher
Mgr. Order Dept. per ec
ELLWOOD IVINS' TUBE WORKS.

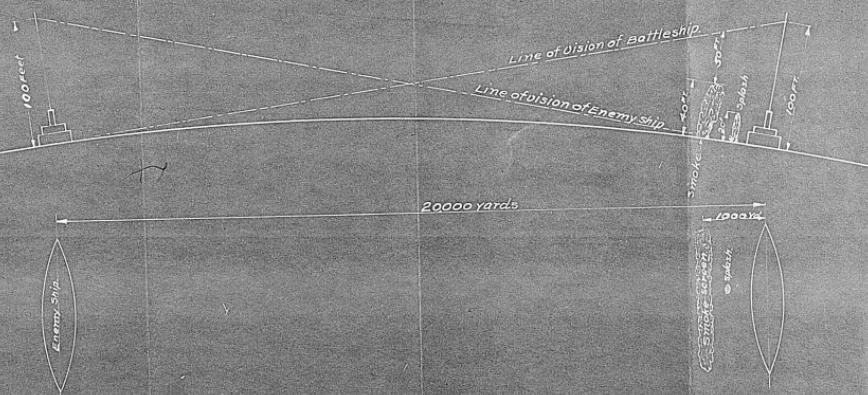


Diagram showing the use of smoke screen to prevent spotting of splash.

T.A.E. Jan 22-1918.

No 47.

*I want to perfect the
Red light before giving it a
number according to Daniels*
January 23, 1918.

Mr. Edison:

I have received copies of your Reports numbers 46, 47, 48, 49, 50 and 51, which have been filed along with the others.

I see by your letters to Sir Eric Geddes, that you have covered these in communicating with him.

But you have suggested one more plan to Sir Eric, which you have not covered by a report to Secretary Daniels. It is the idea about the red lights carried by Merchant ships. Do you not think it would be well to cover this in a separate report to Secretary Daniels? If so, you could have it put in the form of a letter to Secretary Daniels, and call it No. 52.

In order that you may do this, I will attach hereto a copy of what you have said in your letter to Sir Eric Geddes.

WWS Perhaps you are not aware of it, but our practice in sending reports to Secretary Daniels was to send a carbon copy to his personal Secretary and also carbon copy to Rear-Admiral (formerly Captain) Smith. If this has not been done in regard to Nos. 46 to 51, inclusive, shall I send the copies from here?

Very sincerely yours

A/4498.

[ATTACHMENT/ENCLOSURE]

(Plan 7):

I am told that the red lights carried by merchant ships are dangerous. One captain reports having seen 28 ships at night in a convoy of 34. I have tried a light at Annapolis which is very successful whereby all the ships can have lights 50 feet above water, which all ships can see but are invisible from submarines on account of the want of height of their periscopes. The light consists of a red lamp in the center of a large number of flat discs covered with lamp black. These parallel the ray and it can only be seen from crow's nest. I am making a practical one with small gyroscope to obviate effects of rolling and also wind guards. If you desire I will send working drawings after actual trial at sea.

THE SECRETARY OF THE NAVY.
WASHINGTON.

January 23, 1918.

My dear Mr. Edison:-

I am enclosing you a memorandum with
reference to the hydrogen detector.

Sincerely yours,

James Paul Briney

Mr. Thomas A. Edison,
c/o Hotel Powhatan,
Washington, D. C.

Enclosure.

[ATTACHMENT/ENCLOSURE]

N.C.H.W.

NAVY DEPARTMENT,

BUREAU OF CONSTRUCTION AND REPAIR.

Refer to No. 14512-A58-S

WASHINGTON, D. C.

JAN 23 1918 Ab.

MEMORANDUM FOR THE SECRETARY OF THE NAVY.

Referring to conversation with you relative to a hydrogen detector, designed by Mr. Edison, you are informed that I have had this matter taken up with Mr. Edison in person with the following results:

It was decided to have Mr. Edison's representative bring one of the instruments to Washington to be inspected by the Bureau. Mr. Edison sent telegram to the Orange laboratories and this instrument was brought down by Mr. Warner. The instrument was inspected by the Bureau on the morning of January 17 and as previously agreed with Mr. Edison, the matter was taken up with the Bureau of Standards as this Bureau had done considerable work along similar lines. A letter of introduction to Dr. Stratton was given to Mr. Warner and arrangements made on the telephone to have the instrument examined and tested if desirable while Mr. Warner was here in Washington. This inspection was made at the Bureau of Standards on the afternoon of January 17.

The instrument is a volumetric gas analysis apparatus, operated by hand and requiring direct observation. It indicates change of volume after combustion. The sample bulb is so large in proportion to the size of the measuring tube that the instrument is extremely sensitive.

The following is quoted from the Director of Bureau of Standards' report relative to the results of this investigation:

"The apparatus is made of glass, and is fragile and somewhat bulky. For these reasons, as well as because it is not automatic, we do not believe it is especially suited for use in submarines. Mr. Warner concurs in our opinion that an automatic instrument (of the type now being used) is preferable."

W

Turley

[ATTACHMENT/ENCLOSURE]

Meatball
file 466 Warner
Jan. 29th 1918

Mr. Edison.

This report quotes me incorrectly. The instrument they showed me did not work and was complicated. I tried to ram home the idea of the simplicity and reliability of our instrument. We argued the merits of the two types and I admitted that an automatic instrument would be preferable provided it could be made as simple and reliable as ours.

Their instrument certainly does not meet this condition and I cannot understand how what I said could be so construed.

If I had thought that their instrument was preferable I would have so reported to you in Washington but I wouldn't have told them.

The scheme of an electric reading meter which you sent sketch of is something like those they now have but they are not wise to the magnesium coating on wire. I will try this out.

Warren

WESTERN UNION

NIGHT LETTER

GEORGE W. E. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

DELVIDERE BROOKS, VICE-PRESIDENT

RECEIVED AT 238 MAIN ST.
ORANGE, N. J.
3NY H 41 NL

MA WASHINGTON D C JAN 26-18

W H MEADOWCROFT

EDISON LABORATORY ORANGE NJ

ARRANGED WITH NEWYORK TESTING LABORATORY TO HAVE A MAN
WITH INSTRUMENTS FOR TESTING SKY ILLUMINATION READY TO GO TO KEYWEST
UPON RECEIPT OF TELEGRAM FROM ME SAME MEASUREMENTS AS TAKEN
AT GREENPORT KNIERIM WOLFE HANFORD MRS EDISON GO LEAVE HERE
MONDAY.

EDISON

720AM JAN 26

Lena 5513

Mr Little
Mr Miller
729¹ Bradford

U. S. S. "REPOSO II" S.P. 196.

Key West, Fla.,

January 25th 1918.

Mr. Thos. A. Edison,
Room 502 Navy Annex,
Washington, D. C.

My dear Mr. Edison:

I have been unable to write anything, since I last wired you, on account of moving around so much.

The boat arrived last Monday, very much upset, and worked down crew, due to a very severe storm the boat passed through off Brunswick, Georgia, and one or two other places, which were not of as much consequence as the storm off Brunswick. The severe storm lasted for nearly twenty four hours. All on board were very sick, and water came over the top, down to the hatch-ways, and had to resort to bailing out with buckets, in addition to the pumps working.

Ever since its arrival, we have been making repairs to the ship, and getting our apparatus fixed up; all of which we will have, in a day or two, in pretty good shape.

Received your note, advising to help Dr. Coolidge wherever I can. The Dr. McLaren mentioned in Mr. Smith's letter is the President of the Massachussetts Institute of Technology, and is working in connection with Dr. Coolidge. The renting of the house was done by Dr. Coolidge, and I guess the talking was done by a Mrs. Curry, from whom he rented the house. In his conversation today, he said that he would not permit any such information, as that mentioned in Mr. Smith's letter, to get out again, and would furnish the names of his crew, to the Navy Department, so they could, at any time, be identified by anyone who had authority to make inquiry of them. I have offered my services to Dr. Coolidge, and he seems to appreciate your kindness and the spirit in which our services have been offered to them by you. I am enclosing a list of names of our men, on a separate slip of paper. If you will kindly send this list to Mr. Smith, he in turn will send it to his operators, who are here in this District, and can at all times know our men.

I failed to mention in my former letter to you, in telling of the resources of this Yard, that they have a good three inch gun, and ammunition, available, and offered to us by Major Carpenter, in charge. There is one thing lacking, in this machine shop, which we have on the "Sachem", and as she is not going to get out of Annapolis, soon we would like very much to have it sent down to us, for use on our work bench here; that is the bench lathe, belting, shafting, motor and tools which belong to this lathe. They have several lathes, shapers, drill presses like the other tools on the "Sachem", but this one lathe could be mounted here

page two.

on our beach, right on the dock, on the side of our boat, and could be used to good advantage.

The Commandant, Mr. Trout, told us that if we wanted to use the Lighthouse tender "Ivey", (which is quite a large boat, probably 200 feet) he would be glad to let us have, and he would also let us have any of the small boats whenever we need them. He is very anxious to know when you are coming down and wanted to know if I sent the letter he wrote to you.

All of the material which you ordered has arrived, also a gasoline engine and a one and a half kilowatt generator.

Trusting that I may hear from you soon, I remain,

Very respectfully,

S. C. Shaffner,
James Burnes,
S. T. Moore,
J. A. Hanley.

U. S. S. "REPOSO II" S. P. 198.

Key West Fla.,

January 25 1918.

Mr. W. H. Meadowcroft,
Taco, A. Edison, Laboratory,
Orange, N. J.

My dear Mr. Meadowcroft:

I have been waiting to reply to your letters of January 10th, 15th and 17th, until the material you had spoken of shipping me, had arrived. This material has been coming in for the last eight or ten days, pieces at a time, and am glad to say now that the following has been received:

Two volumes of Experimental Science.
Three spools copper wire.
Four pieces magnet steel.
One book on Electrical Magnets.
Eight boxes of material, as listed in your letter Jan. 10.

I notice in your letter that the expressage was prepaid and find that on arrival the boxes were marked collect, and I paid \$66.50 expressage, and receipt was turned in with my weekly report, dated January 19th to Mr. Kellow. If this is not correct you can get the receipt from Mr. Kellow and have the expressage refunded. The only thing now lacking, that I can recall, which I asked you to order, is as follows:--

One book on Amplifiers and Audions.
Five gallons storage battery solution.
Six hand telephones.

-- and the phonograph which I wired you to send on the first Mallory boat. This Phonograph, I needed to use with the accounting records for testing purpose, and at the same time, if you had some of the "seconds" cylinders, to be used on the same phonograph, it would afford quite some pleasure to our men at odd times.

I am enclosing a copy of the packing list from Edison Storage Battery Company, and the dynamo and gasoline engine which arrive here the other day, and I know nothing about. I have, however, written Mr. Edison about it.

I sent by Parcel Post, two small boxes of cigars; one for you and one for Mr. Kellow. These cigars were especially recommended by the Manager of this big cigar factory, the "Gato" Company. I have them wrapped so that they will not lose their moisture, and this Manager said if they can be kept in this moist condition they are a very high grade cigar, and the one who smokes them should enjoy them.

page two:

He said they must be kep in this moist condition at all times, as if they once get dry they could never be brought back to their original condition.

The weather here is very fine. They have a good Navy Yard, well kept, well managed, they have a good boat and a good crew, all well managed. We havent a "cloud in the sky" If we don't get some place now, it is ~~ours~~ simply our fault.

The Mallory boat leaves New York on certain days each week, which date they do not give out; while they may advertise a certain date, they never leave on them, but if you would identify yourself with one of their Officers, they would tell you, confidentially, the date they are to sail, and if any material is put aboard that boat by them, in charge of some Officer, it will reach here more certain, and quicker, to say nothing about the expense, than by shipping it freight, express or even Parcel Post. It arrives in exactly four days from the time it leaves New York.

With kind regards to everybody, I remain,

Sincerely yours,

W. L. M. Jr.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER,
VICE PRESIDENT.
WILLIAM L. SAUNDERS,
Chairman.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Jan. 25, 1918.

To the Members of the Naval Consulting Board,

Dear Sirs:

Please be advised that the next meeting of the Board will be held at the office of the Secretary, Fifth floor, 13 Park Row, New York, Saturday, Feb. 2, 1918.

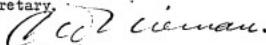
In accordance with the usual practice, the informal preliminary meeting begins at nine o'clock, and the regular meeting at ten.

Very truly yours,

THOMAS ROBINS,

Secretary.

By



In future correspondence on this subject, refer to (Misc. Divn.)

WAR DEPARTMENT,
THE ADJUTANT GENERAL'S OFFICE,
WASHINGTON.

-NAF

January 25, 1918.

Mr. Thomas A. Edison,
Powhatan Hotel,
Washington, D.C.

Dear Sir:

The Secretary of War desires me to inform you that the Chief of Ordnance has been directed this date to ship to you by express, Care Commandant, Navy Yard, Key West, Florida, the following named articles:

One only Vickers Machine Gun, complete with tools and accessories for guns, and belt loading machine.

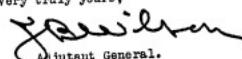
One only tripod with quick elevating and traversing device.

Four belts of 1000 cartridge capacity.

Six belts of 250 cartridge capacity.

12,000 rounds .30 caliber ammunition for above gun.

Very truly yours,


Adjutant General.

Mr. Edison:

I received your telegram
and have made the arrangements
you desire with the Electrical
Testing Laboratory.

Shall I send your mail
to Fort Myers or Key West?

Meadowcroft

Jan 26/18 K
Key west -

Leave this pm - for Key West

D. Mead Monday

DEPARTMENT OF THE NAVY
BUREAU OF STEAM ENGINEERING
N. S. E. 100

COMMERCIAL TRAFFIC
U. S. NAVAL COMMUNICATION SERVICE

S. R. S. No.

RADIOGRAM: STATION

OR U. S. S. DATE January 26th, 1916 , 191

To Thomas A. Edison,

Room 502 Navy Annex, or Powhatan Hotel, Washington, D. C.
Just received the following telegram quote Sachem at Norfolk period.
Will be used for other purposes for present if agreeable answer.
signed Josephus Daniels, Secretary Navy unquote and wired him quote
Telegram received regarding Sachem. Have referred it to Mr. Thomas
A Edison, Powhatan Hotel or Room 502 Navy Annex, Washington, D. C.
unquote.

S. C. Shaffner.

v1--224

ALL FORWARDING DATA TO BE SHOWN ON THIS SIDE

DEPARTMENT OF THE NAVY
BUREAU OF STEAM ENGINEERING
N. S. E. 100

COMMERCIAL TRAFFIC
U. S. NAVAL COMMUNICATION SERVICE

S. R. S. No.

RADIOGRAM: STATION

OR U. S. S. DATE , 191

KY-Key West, Florida.
January 27th, 1916.

To Thomas A. Edison,

Powhatan Hotel, or Room 502 Navy Annex, Washington, D.C.
If SACHEM is not coming here at once please ask Patton to express here
the small lathe, motor, counter shaft, gears, tools and supplies on it.
Answer.

Shaffner.

v1--224

ALL FORWARDING DATA TO BE SHOWN ON THIS SIDE

WESTERN UNION

TELEGRAM



NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If more than one symbol appears after the check (number of symbols will not exceed four), the first character is indicated by the symbol preceding after the check.

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If more than one symbol appears after the check (number of symbols will not exceed four), the first character is indicated by the symbol preceding after the check.

RECEIVED AT

35J DR 10

MC WASHINGTON D.C. 2 65P JAN 27 1918

S C SHAFFNER 216

CARE OF COMMANDANT NAVY YARD

KEYWEST FLA.

SACHEM WILL SOON LEAVE FOR KEYWEST WE ARE LEAVING MONDAY

EDISON

2, 07P

(Call Address "Edison's New York")

*From the Laboratory
of
Thomas A. Edison.*

Orange, N.J. January 29, 1918.

Mr. S. C. Shaffner,
c/o U.S.S. Reposo II, SP 198,
Key West, Fla.

My dear Mr. Shaffner:

I have received your favor of the 25th inst., and am very glad, indeed, to get your report as to the receipt of some of the items which have been forwarded to you.

According to your letter, the items lacking are as follows:

1 Book on Amplifiers and Audions;
5 gallons Storage Battery Solution;
6 hand telephones;
Phonograph and records.

I will report on these as follows: The Book has been out of print. There will be a new edition out on Friday of this week, and your copy will be forwarded then. As to the battery solution, it was forwarded to you by Express on the 21st instant and should be there now. I have sent a tracer. As to the six hand telephones, four of them (the 200 Ohm type) had to be made up specially. The Western Electric people have been very, very busy, and I have been rushing them on it. They now promise to have them ready tomorrow morning and I am going to send a boy over for them, and shall send them down to you by Parcel Post, Special Delivery. The phonograph was sent by Mallory boat last Friday, and you may have it before this letter reaches you.

In regard to the eight boxes of material, I am told they were marked "prepaid" when sent from here. However, we have not received a bill from the Express Company, and if we do, we shall not pay it, but will show the receipt for the expressage paid by you.

I note your remarks in regard to shipping by the Mallory boat, and shall be guided accordingly. Probably the best thing for me to do would be to go over to the pier and make friends with some one who will see that our stuff is forwarded promptly. I don't know when I shall be able to get over in time to send out your telephones in that way, so I will send them tomorrow morning by Parcel Post, Special Delivery, and wish you would tell me how long it takes them to reach you. I feel a little dubious about sending small packages by the Mallory boat for fear they may get lost amongst so much big stuff.

It was very nice of you to send me a sample of Key West products in the shape of a box of cigars. They are certainly a most enjoyable smoke, and I appreciate them very much and thank you for your kindness. The Manager of the Gato Company evidently knows what he is talking about, for the cigars are fine.

I am glad that you find things so agreeable in Key West, and suppose you are pitying us poor fellows up here in the North who are surrounded by snow and ice, to say nothing of coalless Mondays. I am awfully glad that some of you can be down there to enjoy the balmy weather, and I hope you will all have a good time outside of work hours.

With kind regards to you and all the boys, I remain,

Yours sincerely,

W. H. Meadowcroft
Assistant to Mr. Edison.

A/4547.

P. S. I have sent down several packages of Lamp Black for Mr. Edison - Two of the tin boxes contain Lamp Black made at the Laboratory, and the others are samples of commercial stuff.

January 22, 1916.

Mr. Aaron Hill,
Los Angeles, Cal.

Dear Sir:-

Mr. Edison, who has been down at Washington for over three months, has requested me to write to you to let you know that he has been recommending your multiple drill press to Mr. Edward D. Hurley, the President of the United States Shipping Board, who has taken active steps to look into the matter thoroughly.

Yours very truly,

Assistant to Mr. Edison.

A/4662.

ccy to San Diego, Cal.

No.1.

DEPARTMENT OF THE NAVY,
GENERAL BOARD,
WASHINGTON.

CBJ.

Navy

January 29, 1918.

Mr. Thomas A. Edison,
c/o Commandant Naval Station,
Key West, Fla.

My dear Mr. Edison:

I returned the four bound copies of target practice reports which you left with me and in their place have gotten paper bound copies of the same volumes as follows:

{ Report of Elementary Practice, 1915-16, Reg. No. 231
Report of Short Range Battle Practice, 1915-1917, Reg. No. 632
Report of Battle Practices, Spring, 1916, Reg. No. 673
Report of Battle Practices, Spring, 1917, Reg. No. 646.

I signed receipts for these books and am forwarding them to you under separate cover by registered mail. You may keep them as long as you wish and when you have finished with them please return them to me.

I am also forwarding a copy of "Orders for Gunnery Exercises, Battleship practice, all classes of vessels, 1917-18, Reg. No. 2,078" for your use. The target practice office informed me that they loaned you a bound copy of this booklet along with the four larger books which you turned in. If you have this bound copy please have it returned and retain the copy I am sending you as long as you need it.

Doctor Hutchison came in the office this morning to see you in connection with a patent case. A half hour later the enclosed telegram from Mr. A. Hardy arrived. Doctor Hutchison mentioned Mr. Hardy being here.

The enclosed telegram from H. J. Frowell arrived at the same time. I would have forwarded it by wire had I known how to reach you before your arrival at Key West.

Any other telegrams that may come I will re-wire to you in care of the Commandant until you give me other instructions.

Yours sincerely,

Jani Butler

Hope you all had a comfortable trip south.

[ATTACHMENT/ENCLOSURE]

POSTAL
TELEGRAM

RECEIVED AT NAVY DEPARTMENT

603 00 34

Orange NJ Jan 28 1918

Confer with Dr. Brand

Chas A. Edison

Care J J Butler Navy Annex Washington D.C.

Arrive Washington nine fifteen tonight will endeavor to see you
tonight to arrange for conference with examiner tomorrow
morning on non pyrolytic iron application

Chas A. Hardy

550pm

*Failed to reach at
917-9087*

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HEWITT,
VICE-PRESIDENT.
WILLIAM L. SAUNDERS,
TREASURER.
THOMAS ROBINSON,
SECRETARY.

OFFICE OF
FRANK J. SPRAGUE
CH. OF COMMITTEE ON
ELECTRICITY AND SHIPBUILDING
165 BROADWAY
NEW YORK

January 30, 1918.

Dear Edison:

This is a frank attempt to compose the present unfortunate condition of affairs and save the Naval Consulting Board, and possibly the Secretary of the Navy, from very unpleasant criticism. I shall review certain facts as judicially as possible in the hope of your compliance with one or the other of two suggestions.

A year and a half has passed since Congress in the Act making appropriations for the Naval Service for the fiscal year ending June 30, 1917, appropriated a million dollars for the erection and operation of "An Experimental and Research Laboratory", and directed the Secretary of the Navy to report not later than that date and every year thereafter the manner of this expenditure.

At the time of this appropriation a large part of the world was at war, and the erection of this laboratory was a particular ambition of Secretary Daniels, who as soon as he had been assured of favorable action by Congress promptly requested of the Board a determination of the best possible site.

But despite the fact that for nearly ten months we have ourselves been involved in this vast conflict, the end of which no man can foresee, the naval laboratory remains a dream. No site has been selected, no detailed plans determined, no constructive steps whatever undertaken. And why? Because of differences of view-point which have thus far prevented that unanimity of decision which the Secretary has so strongly urged as a basis for his official action. Yet on being requested to make a selection the Board had promptly appointed a committee of six of its members, including yourself, to make the necessary inspections and report. The report in favor of an extension of the present Experimental Station at Annapolis, made by five members of the Committee and including the full substance of your own views, was finally adopted by the Board over a year ago by a practically unanimous vote.

Ordinarily, such action would have been final and the decision would have been promptly accepted. The reasons for and against that decision were set forth in detail and at considerable length. As I read them over they seem as valid today as when made, but at any rate if the report

Page 2 -

had been promptly acted upon an effective and useful laboratory, larger than any other which could have been constructed with the same money, would now be in existence, of ample resources and capacity to have enlisted the professional activities of hundreds of skilled civilian scientists and workmen.

Who can reckon the possible value of such work during the past few months and at the present time, or measure the possible loss in life and property because of its lack, despite the many activities of the members of the Board in other laboratories and workshops? With the facilities which would have been available it is beyond question that some at least of the 39,000 proposals which have been submitted to the Consulting Board, fantastic as the majority of them are, might have been given a deserved opportunity of development instead of being consigned to an early grave with thanks because of the impossibility of providing for such.

The circumstances resulting from this inaction have seriously reacted on this Board. It has lost caste, its recommendations are largely unheeded, its activities are curtailed, its authority largely imaginative.

Whatever usefulness is apparent is largely that represented by the efforts of individuals, often working on their own responsibility and expenses, but sometimes aided by the moderate appropriations authorized out of the laboratory fund. With regard to this last, neither you nor I personally have probably any cause for complaint.

I do not know, of course, in detail what your own activities have been, nor to what extent you have thus far found any particular locality or facilities necessary, but my own experience has emphasized certain vital facts as to the needs of this laboratory, and these have not been lessened by the assumption for myself and assistants of personal risks not usually sought after, and emphasized by the recent accident at the Newport Torpedo Station.

Believing that after all that can be done for the prevention of issue, protection against, and detection of submarines, which have constituted, and unhappily still constitute to an extent generally under-rated, the gravest menace of the war, I believe that for their destruction it is necessary to be able to attack them both above and below water anywhere within range of gun fire. To this end I have been actively engaged in the development of various kinds of ordnance apparatus, including depth-charge mechanisms and sub-aqueous and delay-action fuses, following that development from construction to tests.

This work has taken, or in the near future will take me to the Ordnance Bureau in Washington, the proving ground at Indian Head, the shell works at Gillespie, N. J., the Dupont works at Pompton, the naval depot at Iona Island, the navy yard in New York, the waters off the coast, and the torpedo station at Newport.

Page 3 -

These developments require of necessity drafting and machine work, the preparation and handling of wet and dry fulminates, the loading of detonators, boosters, shells, fixed ammunition and bombs with high explosives, and land and water tests of the finished products.

Save for the mechanical work not a single one of these vitally necessary things would be permitted to be done in the city of New York or any Navy Yard in the country, but everyone of them could be carried on continuously and with safety in any properly equipped and suitably located experimental station and research laboratory having the characteristics set forth in our report, while, on the other hand, the machine work alone could be done in a hundred shope.

Already the country, impatient with the preparations made for war and increasingly appreciative of the great task ahead of us, is becoming critical and justly so. It demands constructive action and will not brook refusal to use the means it places in the hands of its servants at a time of this national crisis. It is up to the Board to make good and to relieve Secretary Daniels from a possible grave embarrassment as an anti-climax to the splendid work which has already been done in naval preparation.

Every member of the Board is impatient at our impotency and chafes at conditions which are fast becoming intolerable.

For the reasons set forth in our Committee report I have strongly favored Annapolis, but in the hope of some compromise, and if unhappily not that then the humiliating relinquishment of our responsibility, I am willing to join the rest of the Board in either of two courses:

First; An immediate recommendation for the erection of the laboratory on plans to meet the approval of the Department on the Bellevue Magazine Site in Washington, which in view of the changed conditions wrought by the war I believe the rest of the Board would unanimously agree to, or

Second; Request Secretary of the Navy that the officers and members of the Board be relieved from further responsibility and the selection be left to the Bureau Chiefs, to whom all papers should be submitted.

Frankly, we have no right to let this matter drag along further. We have been made trustees for the erection of a vital naval establishment, and we should either fulfill our obligations or yield our privilege, and if we do not take constructive action, and the Secretary remains unwilling to, then it may be accepted as a certainty that Congress will inquire the whys and wherefores of the delay and take unto itself the direction of final decision.

Page 4 -

The Board meets again this week in New York, when it will again take up this question. I hope that you will see your way, either directly or thru some representative, to express at that time your cooperation in one or other of the proposals I have made, and in this way, irrespective if necessary of the personal wishes of any of us, remove the stumbling block in the way of the Secretary of the Navy proceeding without further delay in this vitally necessary matter.

Sincerely yours,



HEAD OFFICE: TOKIO
DEPARTMENTS:
SHIPBUILDING & ENGINEERING
(ODOTYARDO) NAGASAKI, KORE, MOJI
IRON AND STEEL
COAL AND METAL MINING
ESTATE BANKING, ETC.

MITSUBISHI GOSHI KAISHA
NEW YORK AGENCY
EQUITABLE BUILDING
120 BROADWAY

CABLE ADDRESS: MITSUBISHI
BENTLEY'S LIEBER'S
WESTERN UNION
A. B. C.-9TH ED.
TELEPHONE, NECTOR 4535-9

NEW YORK January-31st-1918.

NO. 495.

Mr. William H. Meadowcroft,
Assistant to -
Mr. Thomas Edison,
Orange - N. J.

Dear Sir:-

Referring to your favor we received sometime ago regarding the Hydrogen Detector, about which our Mr. K. Suyehiro asked you the end of last year, we would appreciate it if you will kindly inform us as to how the matter is progressing.

Thanking you for your trouble, we remain,

Yours very truly,

SN/MIS

P. G. Munro

4558

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
February 1918**

February 2, 1918.

Mitsubishi Goshi Kaisha,
120 Broadway,
New York, N.Y.

Attention Mr. S. Maranuma:

Dear Sir:-

Replying to your favor of the 31st ultmo, received this morning, I beg to say that there has been a little unexpected delay in finishing the Hydrogen Detector, but it is almost ready, and we expect to deliver it to you about Wednesday of next week.

Possibly, our Mr. Kerner will bring it into New York himself and explain it to you.

Regretting the unavoidable delay, I remain,

Yours very truly,

Assistant to Mr. Edison.

A/4588.

No. 2.

DEPARTMENT OF THE NAVY.
GENERAL BOARD.
WASHINGTON.

CBJ.

February 2, 1918.

My dear Mr. Edison:

I enclose herewith three letters which have come for you through the mails. I also enclose a letter from Admiral Wm. Strother Smith relative to a local civil engineer who wanted to see you. I called up the man with a view to seeing him and get a memorandum of what he wanted to say, to send to you. What he had to propose was of such importance, however, that it was for your ears exclusively. I gathered, as Admiral Smith evidently did, that the country will manage to get along without his idea for a while at least.

There have been some interesting hearings here recently bearing upon some of the problems you have under investigation including Major R. A. Milliken, Dr. Whitney and Mr. C. E. Eveleth, whom I believe you talked with, and several others. If you so desire, I can have copies made to send you or at least extracts of their hearings which I think would be particularly interesting to you.

On account of the increased work in our office and the possibility of a man being useful in making such copies and other work for you, I have been allowed an additional stenographer so that you will not be depriving anyone else of the services of a man any time that you may have any work that he can do here while you are in Florida or after you return. Please do not hesitate to have me look up any references or collect any data you may desire.

Two days after you left here we had a much bigger snow storm than that on the day of your departure and you were indeed fortunate to escape it. With the two storms there was a flat eleven inches of snow and practically the only street traffic was on the car tracks.

With kindest regards,

Yours sincerely,

Jain Butler

Mr. Thomas A. Edison,
c/o Commandant Naval Station,
Key West, Florida.

WESTERN UNION

NIGHT LETTER

GEORGE W. C. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

BELVIDERE BROOKS, VICE-PRESIDENT

RECEIVED AT 238 MAIN ST
ORANGE, N. J.

3NY H 22 NL

KEY WEST FLO FEB 3-18
W H MEADOWCROFT

CARE EDISON LABORATORIES ORANGE NJ
HANLEY HAS BEEN SENT HOME WITH SERIOUS EYE TROUBLE GET
HIS BRASS NAVYYARD PASS AND SEND IT HERE BY MAIL
AT ONCE.

S C SCHAFFNER

705AM FEB 4

mailed 2/7/18

Feb 5 1918

Meadcroft.

Tell Warner when he & theod one comes down to bring a Hydrogen Detector with him & to wrap its packed so as not to break it for fear it might break he better bring it in Car - also better bring some spare glass parts to renew broken glass - I suppose putting one in a submarine, not to test for Hydrogen but to see if jar of coal breaks it & see of its fragile

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
^{PRESIDENT.}
PETER COOPER HEWITT,
^{VICE-PRESIDENT.}
WILLIAM L. SAUNDERS,
^{CHAIRMAN.}
THOMAS ROBINS,
^{SECRETARY.}

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

FEB 6 1918

To the Members of the Naval Consulting Board,

Dear Sirs:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
FEB 16 1918 in the Carnegie Institution,
Washington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS

Secretary.

By

2000 feet 18" dia.
7+1 Galv. Air craft wire
117 lbs per ft
Cord. 800 ft

Meadcroft -

Please see if you can get 2000 ft of
a steel cable about one eighth of an inch
in diameter made of very fine wire.
I think Rockford wire makes it for us on
special government order -
The wire preferably should be their
plough steel cable wire which is
the strongest they make we could
get along with their next strongest
steel wire of plough steel. would
delay them. This is for an experiment
here which is of great importance
You may have to go to their New York
office - Since Oliver Harris & Co
who turned down I don't know
anybody but Rockford but perhaps

2

you may find other makers -

1/8 of an inch is next from the
decimiles of the strands which
are twisted together to form other
cables - We could use 3/16 dia
but about 1/8 w best,

Telgh what you can do for
me and you get it send by express

I tell Lewis Ott to make me up
about 5 lbs of ~~the~~ Vaseline with
the best proportion of flour of
Zinc to prevent molding - The
note book left by Smith will
probably give him best proportion
Smith found - also send

Made up 1 lb sent express. Feb. 13, 18
2000

3

2 lbs of finest Zinc flour in
separate packages. This can come
by Express -

Edison

February 1918 —

2 lbs mailed 2/15/18
3 lbs " 2/18/18
10 PM

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON, President.
PETER COOPER WHITNEY, Vice President.
WILLIAM L. SAUNDERS, Chairman.
THOMAS RODIN, Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

February 7, 1918.

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, N. J.

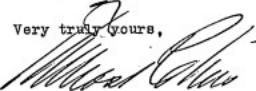
Dear Sir:

We are sending you herewith a copy of a Digest which contains information largely culled from the reports which have been made by the various outstanding Committees of the Board on inventions which have been submitted to them by the Committee of Examiners. As many of these reports were made months ago, some of the opinions expressed should undoubtedly be revised so that the information will be up to date, and the Examiners would greatly appreciate it if you would kindly read over this Digest and make any corrections, eliminations and additions which occur to you. The heading preceding each paragraph contains the subject of the invention, the author of the opinion and the name of the inventor.

Since the organization of the Committee of Examiners, nearly 42,000 letters have been received from inventors and nearly as many inventions have been passed upon, and only 1852 of these have been referred to a Board Committee or about 4%. So far this year only one-half of one per cent of the inventions submitted have been referred to Committees of the Board, indicating that the Examiners have made good use of the information they have gleaned from the reports of Committees, and have been able in a large number of cases to act without assistance. It is, therefore, evident that the Examiners should have up-to-date information.

Thanking you in advance for your kind attention in this matter, and hoping that we may hear from you in the near future, we remain,

Very truly yours,

TR:EAC

Secretary.

[ATTACHMENT/ENCLOSURE]

DEFENSIVE NETS

CLASS 1.

MOVING SUBMARINE BARRIER

SPERRY J.B. NAU

This method has been used a great deal in the North Sea by England and France. The nets there have been about 3,000 feet in length, but are found to bunch and lean over to almost a prohibitive degree, if towed at any practicable speed. The behaviour of nets, either towed or anchored in a current is very difficult to comprehend until seen.

BOW MINE PROTECTOR SPERRY ALEXANDER BOYNTON

The false bow mine protector is all right for the bow, but the mines as soon as they roll off the end of it, would come back and hit the ship, and 400 pounds explosion of T.N.T. at any distance outboard at which it would be practical to carry such a device would not only blow away this protector but would injure the ship. This amount of explosive would be very injurious to ordinary ships' hulls at any such distance.

TORPEDO DEFLECTOR SPERRY W.W. BLACKBURN

#3 All torpedoes have net cutters.

NET WITH MINES BUREAU OF ORDNANCE W.L.R. EMMET

#4 There is no objection to the combination of mines or bombs with a net, provided they are made safe to handle. The Navy has several types of mines or bombs which are believed to be entirely satisfactory for this purpose.

[ATTACHMENT/ENCLOSURE]

OFFENSIVE NETS

CLASS 2

ANCHORED NETS SPERRY A.V. SIMS

#1 A very imperceptible tidal current causes the net to lop way over to one side and to sink the type of the net to a surprising extent.

ANCHORED NETS SPERRY A.V.SIMS

#2 Nets are of little use unless upper rail comes very close to the surface, as submarines run on the surface 95% of the time.

ANCHORED NETS SPERRY A.V.SIMS

#3 There seems to be a hesitancy on the part of all the Navies to employ nets with bombs forming a part of them, owing to the great danger in the very rough handling which these nets invariably receive, especially when attempts are made to lay them in rough weather.

MOVING SUBMARINE BARRIER SPERRY J.B. NAU

#4 This method has been used a great deal in the North Sea by England and France. The nets there have been about 3,000 feet in length, but are found to bunch and lean over to almost a prohibitive degree, if towed at any practicable speed. The behavior of nets, either towed or anchored in a current is very difficult to comprehend until seen.

TORPEDO DEFLECTOR SPERRY W.W. BLACKBURN

#5 All torpedoes have net cutters.

[ATTACHMENT/ENCLOSURE]

| | <u>MINES</u> | | <u>CLASS #3</u> |
|----|---|--------|---------------------|
| #1 | MINE-ELECTRICALLY DETONATED | SPERRY | G.H. THOMPSON |
| | Unreliability is introduced by electrical contacts. | | |
| #2 | MINE-MAGNETICALLY DETONATED | SPERRY | E. H. McHENRY |
| | The magnetic feature has been and is now under very careful investigation by a committee of this Board and to date has been found extremely unsatisfactory, owing to the extremely short distance through which magnetism is found to be at all effective. | | |
| #3 | DESTROYER TOWING MINES | SPERRY | JOHN W. PETERS |
| | This arrangement has been tried in England with a decoy and has not been sufficiently productive of results to warrant its continuance. | | |
| #4 | CHASER TOWING MINES | SPERRY | JOHN G. LEE |
| | This would be a good device if the whereabouts of the submarine were known. There are a great many perfectly successful methods, including the now quite well known depth charge of the U. S. Navy, for dealing with the submarine when its whereabouts is determined. The problem lies rather in the locating of the submarine. | | |
| #5 | MINE ATTACHED TO SUBMARINE BY MAGNET | SPERRY | F. W. STEERE |
| | Magnets would not hold to a boat running through the water and therefore the scheme is impracticable. The main point would be to locate the submarine. Magnets are found almost valueless for the purposes named. When the submarine is once located very simple means are at hand for disposing of it. | | |
| #6 | MINE SUPPORT FOR CHASER | SPERRY | ROBERT WOOD |
| | The difficulty with this device is that the submarine usually stands off at a distance laterally from the boat. A submarine always sees the boat before the boat sees the submarine. The present depth mines do not require special devices for handling and are probably better. | | |
| #7 | CONTACT DEPTH MINES | SPERRY | PROF. C. M. SPARROW |
| | A contact depth mine, rising to the surface if failing to contact, is unnecessary and inadvisable. The essence of the depth charge is that it explodes in the vicinity of the submarine in case it fails to strike the boat itself. The use of the contact depth mine presupposes the necessary accuracy to strike. The recovery feature is of no particular value and would necessitate numerous safety precautions to insure absolute safety in picking up. | | |

[ATTACHMENT/ENCLOSURE]

CLASS #3 (Continued)

M I N E S

SPERRY

T. J. CAHILL

AEROPLANE MINE LAYER

#8

When an effort is made to lay a torpedo by an aeroplane, not only does the horn suffer, but the torpedo itself is likely to be broken up. Tests have been made recently which show that the torpedo under conditions that in no way resemble aeroplane speeds ricochets and tumbles in the most disastrous manner. The method suggested for protecting the horns might be good, but it is so necessary to work quickly that the soluble matter would have to be wholly dissolved in a very short interval of time, so as to allow of operation when the target is finally reached.

M I N E

SPERRY

C.E.HAMMOND

#9

Cases where the net or anything connected with it has to be anchored to the bottom of the sea have been proved to be impracticable, because the nets are entirely unmanageable in even the feeblest tidal currents.

[ATTACHMENT/ENCLOSURE]

| | <u>TORPEDOES</u> | <u>CLASS 4</u> |
|----|---|----------------------------|
| #1 | PROJECTILE TORPEDOES | MAXIM EDWARD NORTH |
| | There are no means detailed in this case by which a torpedo may be provided with the necessary mechanism to make it function as a torpedo after striking the water, and which mechanism would stand the shock in the gun. The committee is therefore unable to recommend that any experiments be conducted with the device. | |
| #2 | TORPEDO DESTROYER OR DEFLECTOR | SPERRY WM. W. BLACKBURN |
| | All torpedoes have net cutters and one has to be very quick to get anything down in front of an oncoming torpedo, let alone seeing the torpedo at all. | |
| #3 | DEVICE FOR DESTROYING TORPEDOES | LAINE D.A. KIMBARK |
| | All the evidence that we can collect from those with experience in the operation of torpedoes, shows that it is hopeless to attempt to protect against them after they are once fired. The interval between firing and hitting is usually so short that it is difficult to act within this period. | |
| #4 | MULTIPLE TORPEDO DIS- CHARGING APPARATUS | SPERRY FRANK BAKER |
| | It is not understood that there is any great demand for a means for firing a large number of torpedoes quickly, as only one hit with a torpedo is necessary to disable a ship. | |
| #5 | CATAPULT | SPERRY C.G. FALLON |
| | The best catapult energizer known is gun powder. A torpedo is expelled by nothing more nor less than a catapult energized by two or three ounces of powder, in which case the apparatus occupies less valuable space on board ship. | |
| | TORPEDO CONTROLLED FROM SHIP BY CABLE | SPERRY G. D. CAMPBELL |
| | A torpedo controlled from a ship by a flexible cable connecting it with the ship was the first kind of torpedo built, but was discarded for the present dirigible type. The weight of cable, difficulties in installation, etc., render it impracticable. | |
| | MAGNET CONTROLLED | SPERRY C.V. LEIGH |
| | Numerous experiments with regard to devices utilizing magnets have been tried with discouraging results. It has been found that magnetic influences are not felt at a distance. | |

[ATTACHMENT/ENCLOSURE]

TORPEDOES

CLASS 4 (continued)

- | | | | |
|---|--|---|--|
| <p>#8</p> <p>#9</p> <p>#10</p> <p>#11</p> <p>#12</p> <p>#13</p> | <p>LONG RANGE TORPEDO MAGNET CONTROLLED TORPEDO WEST OF TORPEDOES SOUND ACTUATED DEVICE FOR CONTROLLING TORPEDOES PROJECTILE TO DEFLECT TORPEDO WIRELESS CONTROL OF DIS- TANT MOBILE APPARATUS</p> | <p>SPERRY SPERRY SPERRY LAMME LAMME BLISS BLISS</p> | <p>HOLMES DUKE P. O. PERKINS P. O. PERKINS D.A. KIMBARK AUGUSTUS L. MOSS C. G. SPENCER</p> |
|---|--|---|--|
- The great difficulty in getting proper direction for a long duration of time renders the long range torpedo impracticable. Torpedoes running at or near the surface are not considered practicable, nor are torpedoes directly operated by combustion engines as motive power.
- No magnet, unless in actual contact with the steel ship, would give magnetism enough to control the torpedo. The ridiculous small distances through which these magnetic devices are found to be effective render them undesirable and impracticable. Any automobile torpedo is very expensive and requires expert attention and is therefore undesirable.
- A great many nest arrangements of torpedoes have been considered, also torpedoes combined with nets. The Government does not believe that any of these combinations are as practicable as means that are now at hand.
- The sound made by submarines when traveling under water, at a distance of a mile or more, is so faint and indefinite that it is not believed that any controlling device depending on sound-waves for action could be made operative.
- Torpedoes are not easily deflected in this manner. Heavy charges have been exploded experimentally directly in front of and at the sides of torpedoes, for the purpose of determining the possibilities of deflecting them from their course. The regulating gyroscopic of a torpedo immediately brings it back to its normal course, so that such method may be considered as ineffective. Moreover, it should be understood that usually there is no knowledge that a torpedo is coming until it actually hits the vessel.
- An extended series of experiments have been made in this direction during the past few years, by engineers in this country, and some interesting results have been obtained under favorable conditions. Unfortunately, however, in actual warfare favorable conditions are seldom secured. In all varieties of selective wireless control, the principle difficulty is to obtain the absolute certainty of control which such system must possess to be serviceable. Any wireless control arrangement depending on pre-determined wave length of uniform or variable

[ATTACHMENT/ENCLOSURE]

TORPEDOES

CLASS 4 (Continued)

strength, is liable to interference at any time, both from enemy and friendly ships or wireless stations, and such interference is likely to be attended with unexpected results. For this reason no practical use has been made, up to the present time, of suggestions of this nature.

[ATTACHMENT/ENCLOSURE]

SUBMARINES

CLASS 5

ONE MAN SUBMARINE ADM. A.W.GRANT T.W.SORGE

- #1 It is the opinion of Naval Authorities that no one-man or two-man submarine can be built which will prove effective in any degree. The fundamental difficulties of operation of such boats render them impracticable instruments, deserving of no expenditure by the Government.

BABY SUBMARINES LAKE FRANKLIN INS.JOUR.

- #2 One-man "Baby" submarines would, on account of their low speed, limited range of action and unseaworthiness, be of very little use today.

SUBMARINE TO FIGHT
SUBMARINE LAKE FRANKLIN INS.JOUR.

- #3 As it is impossible to see the invisible, submarine cannot fight submarine. Infested as have been the waters of the North Sea and English Channel no case is known where one submarine has succeeded in sinking another. An Austrian submarine did sink an Italian, but the latter was surface cruising.

SUBMARINE SPERRY FREDERICK A.PHELPS

- #4 When we once know where a submarine is, or even its approximate position, the rest is easy.

[ATTACHMENT/ENCLOSURE]

MARINE DETECTION DEVICES

CLASS 6

SOUND ACTUATED DEVICE FOR
CONTROLLING TORPEDOES

LAMME

D.A.KILBARK

- #1 The sound made by submarines when traveling under water, at a distance of a mile or more, is so faint and indefinite that it is not believed that any controlling device depending on sound waves for action could be operative.

DETECTION OF SUBMARINE BY
MAGNETIC NEEDLE

LAMME

B.A.WILLIAHON

- #2 Tests made on an actual submarine have shown that the magnetic effects, due to this mass of iron, are quite limited in range. For instance, at 150 feet distance the magnetic effect, due to a submarine, is only about $1\frac{1}{2}$ as much as the earth's magnetic effect. A submarine at 1000 feet distance would have an effect so small that no instrument on shipboard could detect it from other influences.

UNDERWATER ILLUMINATION

SPEERY

W.F.JAY

- #3 Experiments are being tried on underwater illumination, but it will be some time before it is known to what extent boats may be seen by searchlight beams or light from other sources.

UNDERWATER ILLUMINATION

LAMME

R.J.PARRISH

- #4 Underwater illumination depends upon the amount of foreign material in the water. Around England the water is so murky that a range of any light under water is extremely limited. On the other hand, along some parts of the American coast, the range is several times as great, due to the purity of the water.

SUBMARINE DETECTION BY
SOUND

WHITNEY

FREDERICK T.IDDINGS

- #5 One of the difficulties with the simple form of sound detecting device is that the undesirable sounds and disturbances do not come from a definite single source, which would permit of their blotting each other out, but they come from many directions, especially in rough weather. The principle is, however, receiving careful study, and the same may be said of the trombone slide, which was introduced into the problem a long time ago.

SUBMARINE DETECTOR

LAMME

G.M.MARSHALL

- #6 That the permeability of water is many times greater than that of air is not borne out in practice, and, in fact, we can find no difference in the magnetic indications in water and in the air. The magnetic effect due to a submarine at a distance of 100 yards is so minute that impossibly delicate apparatus is needed to show such effect. Experience shows that the delicacy is very much greater than is permissible on shipboard.

[ATTACHMENT/ENCLOSURE]

WIRELESS

WIRELESS CONTROL OF DISTANT MOBILE APPARATUS

BLISS

CLASS 7

C.C.SCIENGER

An extended series of experiments have been made in this direction during the past few years, by engineers in this country, and some interesting results have been obtained under favorable conditions. Unfortunately, however, in actual warfare favorable conditions are seldom attained. In all varieties of selective wireless control, the principal difficulty is to obtain the absolute certainty of control which such system must possess to be serviceable. Any wireless control arrangement depending on pre-determined wave length, or uniform or variable strength, is liable to interference at any time, both from enemy and friendly ships or wireless stations, and such interference is likely to be attended with unexpected results. For this reason no practical use has been made, up to the present time, of suggestions of this nature.

[ATTACHMENT/ENCLOSURE]

SHIP CONSTRUCTION

CLASS 8

FROM "THE MARINE JOURNAL":-

An innovation in some of the vessels building at Portland, Ore., for the Government is that they will be masts and in place will have collapsible steel towers that can be raised when in port and utilized in the handling of cargo. This design was adopted to reduce visibility when at sea in the war zone.

[ATTACHMENT/ENCLOSURE]

HEAVY GUNS AND SHELLS

CLASS 9

COUCHIONING DEVICE

MAXIM

MAJ. J. W. WATSON

#1 It is a very old expedient to attempt to relieve the shock on projectiles and they have been many times tried and found failures. It is necessary to get high pressure on the base of a projectile in order to impart to it the required velocity. A better result would be obtained by leaving out the cushion and by leaving an air space instead.

PROJECTILE

MAXIM

NEWTON L. HALL

#2 The primary object of an armor-piercing projectile is not only to punch a hole in a ship, but also to carry an explosive charge through the hole. An armor-piercing projectile without an explosive charge would be practically worthless.

PROJECTILE TO EXPLODE
TORNADO

MAXIM

ANTHONY E. KOSC

#3 Heavy charges have been employed experimentally directly in front of and at the side of torpedoes, for the purpose of determining the possibilities of deflecting them from their course. The resulting process of a torpedo immediately brings it back to its normal course, so that such method may be considered as ineffective. Moreover, it should be understood that usually there is no knowledge that a torpedo is coming until it actually hits the vessel.

NON-RICOCHETING PROJECTILE

T. R. BILL

#4 The Navy Department is already employing a satisfactory non-ricochetting projectile which, in the opinion of the committee, is superior to the device presented, and for that reason the committee does not recommend that experiments be conducted with the latter at the expense of the Government.

PROJECTILE-NON-RICOCHETING
SCREW NOSED TYPE

MAXIM

#5 The Navy has one or more types of shell that penetrate the water satisfactorily, and any improvement would be along the line of straighter under water trajectory and reduced under water resistance. The screw nosed type has not been tried, but it would seem that inventors are laboring under a misapprehension; viz., that the shell will screw its way into the water; whereas a shell rotates only once in about 25 to 30 calibers and the fraction of a revolution which it makes while entering the water is negligible.

CHAIN SHOT

SELLERS

THOMAS ROBINS

#6 The principle objections to chain shot are its limited range and its lack of accuracy, as compared to rifle projectiles. To get a high velocity or a moderate range requires a very strong construction, and may not be feasible. Used against aerialships and aeroplanes which operate at from 10,000 to 15,000 feet altitude, chain shot will be entirely inadequate both in range and accuracy of fire.

[ATTACHMENT/ENCLOSURE]

HEAVY GUNS AND SHELLS

CLASS 9

CHAIN SHOT SUBSTITUTED FOR
SHRAPNEL BULLETS IN SHELLS MESSICK

S.R.SCHAFF

#7

Experiments have shown that chain shot, due to the increased air resistance, does not travel accurately for any considerable distance. Proposals to have chain replace the bullets in shrapnel shell have been made and proposals to have a chain attached to balls fired from separate cannon have also been suggested. The air resistance of the chain, no matter in what manner it is projected, is irregular and very high, so that its trajectory is erratic and its range short.

[ATTACHMENT/ENCLOSURE]

SMALL ARMS AND AMMUNITION

CLASS 10

CENTRIFUGAL GUN

MAXIM

WALTER T. STANTON

#1 The device is without useful novelty or practical merit for the reason that Centrifugal Guns would be entirely valueless in modern warfare in competition with other means now in use.

CENTRIFUGAL GUN

MAXIM

J. P. O'CONNOR

#2 The Centrifugal Gun of any type is useless in modern warfare in competition with other means now in use. No model is needed to pronounce upon this device.

MACHINE GUN - FOUR-BARRELED
ROTARY - FOR AEROPLANE

MAXIM

H. J. YOUNGBLOOD

#3 It is the sense of the Committee, that the advantages, if any, of this device are not sufficient to warrant the additional weight and complication of the arm.

MACHINE GUN - THREE-BAR-
RELED RIFLE

MAXIM

ARMAND CALAME

#4 The advent of the automatic gun in 1887 put all other forms of machine guns out of the running. There are so many advantages possessed by the automatic gun that it is not worth while to give a thought to any other. Many suggestions have been made to build automatic guns with a plurality of barrels, but it has been found to be far more practical to use the single barrel. Instead of duplicating the barrels it is better to duplicate the entire gun.

[ATTACHMENT/ENCLOSURE]

EXPLOSIVES

CLASS 11

GAS MIXTURES

MAXIM

C.K.MacFADDEN

- #1 The substitution of explosive gas mixtures for high explosive charges in bombs, torpedoes, projectiles and the like is absolutely impracticable.

GAS MIXTURES

MAXIM

C.K.MacFADDEN

- #2 We have already available high explosive bursting charges far more powerful than could possibly be produced by the employment of such gas mixtures under the highest compression.

GAS MIXTURES

MAXIM

C.K.MacFADDEN

- #3 An explosive mixture could be made of solid materials which would equal any explosive gas mixture that could practically be produced and at a very much less cost.

[ATTACHMENT/ENCLOSURE]

AERONAUTICS

CLASS 13

AUTOMATIC-PILOTLESS-BOMB-DROPPING AIRPLANE MAXIM WM.A.BARNES

#1 It is the sense of the Committee that the device is impracticable. One of the main objects sought by such devices is to save the life of the aviator, the ordinary inventor not recognizing the fact that it is far less important to protect the lives of men in war than it is to protect the important implements and engines with which they are fighting. An aeroplane or a machine gun is worth more than a man.

FLYING TORPEDO MESSING N.H.NELSON

#2 The general idea of a flying torpedo is not new to us, and has been given a great deal of study by experts. The design of such a device presents many problems such as, light, powerful, reliable motor; a controlling device which will guide the torpedo through to its mark in spite of varying air currents; a sighting device which will give sufficiently accurate aiming of the torpedo. Even the most exact instruments fall short of this last requirement because of the curvature of the earth's surface preventing the gunners seeing the target. If these difficulties can be overcome, this device will be of value.

MULTIPLE BLADE PROPELLER SELLERS EDWARD E.ADAMSON

#3 The multiple blade propeller has been found inefficient as compared with one having two or four blades.

FEATHERING MULTIPLE BLADE SELLERS EDWARD E.ADAMSON

#4 The exact action of a feathering multiple blade propeller cannot be predicted, but the presumption is that it would be inefficient. Feathering blades for horizontal progression have been proposed and are being experimented with. A feathering propeller will have to rotate very slowly and consequently be large.

AEROPLANE OBSERVATION ATTACHED BY CABLE TO SHIP SPERRY MARIO SCHIESARI

#5 The plan proposed is tremendously expensive, both as to the ships and the aeroplanes themselves, and does not seem to be practicable, as it would introduce great difficulties in flying. The seaplanes themselves are not reliable, as we have determined after four years' practical experience. The cable would give an intolerable head resistance and added weight to be carried, and cables would, in all probabilities, become entangled.

AIRPLANE ENGINE MAJOR J.H.SCUTLEN J.R.RIDLION

#6 It is inexpedient for this office to consider or express an opinion on engines merely in process of design. This office is interested in engines that have passed this preliminary stage and have undergone actual test. Your attention is called to the

[ATTACHMENT/ENCLOSURE]

AERONAUTICS

CLASS 13(Cont'd.)

tendency in contemporary development to meet future requirements, resulting in the following desirable airplane engine characteristics:

- #6 Horse Power, 250, 350, 400 or over.
Propeller r.p.m. 1400 to 1000
Propeller geared down from engine speed
Total weight per H.P. not over 2.5 lbs.
Horse Power per cu.in. cylinder displacement from 0.23 to 0.28 or over
Fuel consumption in lbs. per Horse Power hour from 0.50 to 0.45 or under.

AIRPLANES WITH FOLDING WINGS SPERRY FRANK A.GERRUTI

- #7 The Wright seaplane in England has folding features which have proved practicable for storing in ships. For land machines folding is not desirable.

TIPLING PROPELLER SPERRY J.W.CAMRIKE

- #8 The scheme of so mounting the propeller that it may be tilted at any angle relative to the machine, the object being to get away and land in small spaces, is not practicable.

DIRIGIBLE DRIVE SPERRY T.S.HARRIS

- #9 Driving dirigibles by air jets creating a vacuum in front of gas bag would be highly inefficient.

PENDULUM AIRPLANE STABILIZER SPERRY F.E.WHITLACK

- #10 This idea has been frequently suggested and proved to be of no value. A pendulum will not operate successfully on board ship, much less upon an air ship, where all the motions are greatly accentuated.

INHERENTLY STABLE AIRPLANE SPERRY T.C.RUSSELL

- #11 The inherently stable machine is not desirable. It always means inherent "crankiness" in anything resembling rough weather. The British Government tried it and gave it up.

CAPTIVE SEAPLANE SELLERS C.A.DeCASTRO

- #12 The suggestion of utilizing a captive seaplane in detecting the presence of submarines and torpedoes has been made many times. The idea is inoperative and impracticable.

[ATTACHMENT/ENCLOSURE]

AERONAUTICS

CLASS 13-cont.

SAFETY DEVICE FOR AIRPLANES SPERRY C.A.DECASTRO

- #13 The scheme of using a parachute for saving an airplane in case of motor failure has been tried out long ago.

MULTIPLANE

WABY (Sperry) R.S.COTHRAN

- An airplane having a great many planes, absolutely flat and 100 feet and 50 feet wide, placed one foot apart. It is claimed that the planes being flat no undulations of air between the planes will take place, thus making it possible to use a great many planes, very wide from front to back and placed close together. The resistance would be so great that the number of engines required to operate it successfully would tax practically all of its sustaining power. Also, undulations would no doubt take place between such wide planes.

AEROPLANE MINE LAYER

SPERRY T.J.CAHILL

- When an effort is made to lay a torpedo by an aeroplane, not only does the horn suffer, but the torpedo itself is likely to be broken up. Tests have been made recently which show that the torpedo under conditions that in no way resemble airplanes speeds ricochets and tumbles in the most disastrous manner. The method suggested for protecting the horns might be good but it is so necessary to work quickly that the soluble matter would have to be wholly dissolved in a very short interval of time, so as to allow of operation when the target is finally reached.

[ATTACHMENT/ENCLOSURE]

LIFE SAVING APPLIANCES

CLASS 15

LIFE SAVING DEVICE

MILLER AMERICAN LIFE BUOY CO.

J1 has to be blown up, or which if punctured, loses its supporting power

STEEL PUTTEES

MAXIM CHAS. D. AIKEN

J2 It would not be practicable to make steel puttees sufficiently flexible to make them comfortable for the wearer, that is to say, leather would serve the purpose better in this respect. Steel would not be of greater value than leather. Steel puttees would rust badly. Steel being so good a conductor of heat, steel puttees would be rather cold for the legs in winter, even though lined or covered.

LIFE BELT

MILLER-MAXIM A.L.SLEE

J3 No life belt is acceptable which needs inflation.
Rubber rots quickly.

METALLIC COLLAPSIBLE
LIFE BOAT

CAPT.A.P.LUNDIN JOHN A. CONNOLLY Jr.

J4 A disadvantage of this construction is that wooden bulkheads are attached to the steel shell in the double bottom. Experience with such construction shows that it soon starts leaking, principally on account of the expansion and contraction being greater in the wood than in the metal, and therefore such bulkheads will be of negligible value as far as keeping out water from the different compartments is concerned. Special precautions must be taken to keep the inner bottom free from water. Unless this is done, a deck life boat with faulty bulkheads will very soon be a dangerous proposition as regards buoyancy and stability. It should also be protected for the same reason, against injuries to the hull by some fenders or other means. Where wood is attached to metal, corrosion soon begins; it was for this reason that wooden keels were abandoned in metallic boats several years ago. Manholes should be provided to permit of easy access to all compartments, for frequent inspection, cleaning and painting. Corrosion will soon start if proper care is not taken, especially when compartments are filled with cork, which has a tendency to retain moisture. Severe tests at sea demonstrate that the Lundin Deck Life Boat is the most satisfactory so far designed.

[ATTACHMENT/ENCLOSURE]

STEAM ENGINEERING

CLASS 19

STEAM PURIFIER

HUNT

H.E. BAYRIE

#1 The present system of dry pipes employed in the Naval boilers gives steam of a quality so high as not to justify the installation of additional apparatus.

ECONOMY & POWER PRODUCTION HUNT.

EVERETT W. SWARTWOUT

#2 The possibility of the use of intermediate super-heating is one which has often engaged the attention of engineers. Its possibilities are thoroughly understood, but the complications of same, the weights involved and space occupied have always condemned it for use on board ships. Experiments were made with a small engine using a super-heater at Cornell University some years ago which gave excellent results as regards economy.

[ATTACHMENT/ENCLOSURE]

FUEL & FUEL HANDLING

CLASS 20

SMOKE PREVENTION

ROBINS

PERCY H. THOMAS

#1 Various processes for prevention of smoke on vessels have received most careful consideration from this Board and it has been decided that as they involve the use of somewhat elaborate apparatus, they require more careful supervision than they would be likely to receive on an ordinary sail. With the best of these systems the uncertain human element is likely to receive on an ordinary ship. With the best of these systems the uncertain human element is likely to fail. The Board, therefore, decided that the only safe system of smoke prevention was that in which smokeless fuel was used, and we are doing everything possible to facilitate the use of anthracite coal and other smokeless fuels.

PULVERIZED FUEL

HUNT

CHARLES G. HAWLEY

#2 The subject of the use of pulverized fuel under boilers of merchant vessels has been given careful thought. There is no question that the use of this fuel has been successfully worked out by shore standards, but considerable difficulty may be expected when applied on board ship as the space and weight required for dryers and pulverizers then becomes quite a factor. Up to date, the Board has felt that it was not advisable to recommend anything being done in this direction.

SMOKE CONSUMER

MILLER

W. J. BALDWIN

#3 There is no question that the visible matter in smoke can be scrubbed out with certain types of apparatus. The whole subject has been considered at length, and the conclusion reached is that to handle the quantity of gases emitted from a vessel's stack will require in most cases such an amount of machinery and apparatus, as well as power, as to make the use of such a system inadvisable. The small submarine chasers are equipped with internal combustion engines and emit no smoke. Torpedo Boats and Destroyers use Oil Fuel, and can suppress or emit smoke at will.

ELIMINATION OF VISIBLE SMOKE

M. ALPERN

#4 This whole matter of eliminating visible smoke by scrubbing the stack gases has been very fully considered in connection with the work of the Ship Protection Committee of the Emergency Fleet Corporation, and it has been decided that it cannot be applied without such serious interference as to render its use inadvisable.

[ATTACHMENT/ENCLOSURE]

| <u>AIDS TO NAVIGATION</u> | | <u>CLASS 22</u> |
|---|--------|-----------------|
| STEERING DEVICE | SPERRY | E.HUMBOLDT |
| #1 Controlling the steering mechanism of ships through electric contacts controlled by a compass is old and is in use to a limited extent in torpedoes. | | |
| AUTOMATIC STEERING OF SHIPS | SPERRY | J.H.O'KINNILL |
| #2 A selenium cell arrangement to control steering gear from compass card is old as to idea. There would be no apparent use of this system in the present crisis, and manual control of a ship is preferable as it is on the side of safety. | | |

[ATTACHMENT/ENCLOSURE]

INTERNAL COMBUSTION MOTORS

CLASS 23

AIRPLANE ENGINE MAJOR J.H. SCOTTEN J.R. RIDLON

It is inexpedient for this office to consider or express an opinion on engines merely in the process of design. This office is interested in engines that have passed this preliminary stage and have undergone actual test. Your attention is called to the tendency in contemporary development to meet future requirements, resulting in the following desirable airplane characteristics:-

Horse Power 250, 350, 400 or over
Propeller r.p.m. 1400 to 1600
Propeller geared down from engine speed
Total weight per H.P. not over 2.5 lbs.
Horse Power per cu.in cylinder displacement
from 0.25 to 0.28 or over
Fuel consumption in lbs per Horse Power hour
from 0.50 to 0.45 or under

KEROSENE CARBURETORS

PARSONS

Many types of kerosene carburetors have been suggested and many patents taken out and in a low speed engine most of these types operate satisfactorily. For an airplane or automobile or truck engine where the speeds are 1000 revolutions or greater, the kerosene gases will not operate satisfactorily due to their sluggishness. A kerosene carburetor is not a satisfactory method for carbureting fuel oils for use in high speed engines.

[ATTACHMENT/ENCLOSURE]

CITICAL CLASS. PERISCOPE, RANGE FINDERS, ETC.

CLASS 26

PERISCOPE-REINFORCING-MIXTURE FLOATED
ON SEA MAXIM

J. F. A. PHILLIPS

- #1 It is the sense of the Committee that the ocean areas are so vast in which submarines are operating that it would be impracticable to utilize such means with satisfactory results.
PERISCOPE INVISIBLE USE OF MIRRORS GREG. DANIELS MR. ROBINS

#2 Some time ago there were some experiments performed on the subject of invisible periscopes, and the officers interested in that work have come to the conclusion that the use of mirrors is not practicable. Any rifling of the submarine will change the angle of incidence and reflection and serve more to reveal the position of the submarine than anything else, almost. It is very difficult to see a submarine periscope, and the artistic use of paint simulating the foam and green water is one of the best means of making a periscope invisible.

- #3 POLARIZATION DEVICE FOR BINOCULARS NAME W. F. SUTHERLAND
The suggestion that a polarization device, be used in binoculars for cutting out the glare at sea, has been tried with success.

- #4 SHOOTING BLINDING MATERIAL AT PERISCOPE WHITNEY R. B. HOWELL
If a periscope can be seen to shoot at, the rest is easy. When a submarine is actually in sight it would seem preferable to fire explosive shells to destroy the submarine, rather than to use time and material to fire blinding material at it.

- #5 UNDERWATER ILLUMINATION GARDNER DR. E. A. TRAPP
Exponents of the underwater telescope expect great results from the use of a large condensing lens in front of the telescope. But the magnification of the telescope under such conditions, is always increased in the same ratio as the light grasp, so that the greater amount of light is distributed over a correspondingly greater area of the retina of the eye and in the ideal case the brightness of the image remains the same. Actually it is diminished somewhat by the greater absorption of the additional lenses. The impossibility of increasing the intrinsic brilliancy of an extended image is as well established as the impossibility of perpetual motion.

[ATTACHMENT/ENCLOSURE]

OPTICAL GLASS, PERISCOPE, RANGE FINDERS, ETC.

CLASS 25 (cont'd.)

MIRRORS TO MAKE A
PERISCOPE INVISIBLE

MR. SET

MR. ROBINS

Inverted truncated cones might be servicable but it might be better and simpler to use pyramids instead of cones. As long as these were placed at such an angle that the roll of the boat would not cause them to reflect the sky, the result ought to be very good. A cylindrical mirror would show a bright line on one side like a polished shaft and any flat vertical surface might reflect the sky when the boat rolled. The enclosed sketch shows an arrangement which would probably be quite effective in hiding a periscope if the mirror was turned toward the vessel attacked. The arrangement shown in fig. 2 corresponds to your cone idea. The objection to that is that on each pyramid or cone surface, we would see the reflection of the one below. Such an arrangement could easily be experimented with and might be worth while.

[ATTACHMENT/ENCLOSURE]

B O M B S

CLASS 28

PARACHUTE BOMB

SPMKRY

W.L. LOOPE

Bombs with parachutes have been tried, but they carry so much sail that they are totally unreliable on account of the enormous factor of drift, which always is an extremely uncertain factor. Owing to these circumstances this device cannot be recommended.

[ATTACHMENT/ENCLOSURE]

DECREASING VISIBILITY

CLASS 30

SMOKE CONSULMER MILLER

W.J.BALEWIN

There is no question that the visible matter in smoke can be scrubbed out with certain types of apparatus. The whole subject has been considered at length, and the conclusion reached is that to handle the quantity of gases emitted from a vessel's stack will require in most cases such an amount of machinery and apparatus, as well as power, as to make the use of such a system impracticable. The small submarine chasers are equipped with internal combustion engines and emit no smoke. Torpedo Boats and Destroyers use Oil Fuel, and can suppress or emit smoke at will.

ELIMINATING VISIBLE SMOKE HUNT

M.ALTERI

This whole matter of eliminating visible smoke by scrubbing the stack gases has been very fully considered in connection with the work of the Ship Protection Committee of the Emergency Fleet Corporation, and it has been decided that it cannot be applied without such serious interference as to render its use impracticable.

EXTRACTS FROM LETTERS RESPECTIVELY TO
MR. THOMAS ROBINS, ADMIRAL ROUSSEAU
SHIP INVIS- AND MR. S.G.KOON W.A.MACKEY
IBILITY

When the Mackey designs were first used the design was put on in lines and angles, using the colors in broad masses without spots. The Navy is using more of the red, green and violet, than they did at first. Combined with the red, green and violet, the Navy uses black and white. By using violet deep instead of black and by using light green, red or light violet instead of pure white, there is a reaction with the ray-filter and this reaction gives greater confusion to the design. Two models of submarines have been painted to represent fish, one for northern waters and one for southern waters, and an interesting design of boat, some Dazzle and some parts painted to vibrate and go out, leaving the Dazzle only. Two police boats were painted, one for daylight operations, the other for evening and night work. Professor John Treadwell Nichols of the American Museum of Natural History has assisted and directed the painting of two (2) scale models of submarines, explaining how a fish that swims near the surface is protected from detection by color, light and shade. The ray-filter is also being studied, so that color in combination with the Dazzle design will prevent a clear outline being obtained. The drawings made by the officers of the I.M.M. show that red, green and violet-blue, combined with black, are at present the colors most used.

FROM "THE MARINE JOURNAL":-

An innovation in some of the vessels building at Portland, Ore., for the Government is that they will be mastless and in place will have collapsible steel towers that can be raised when in port and utilized in the handling of cargo. This design was adopted to reduce visibility when at sea in the war zone.

Recd 2/8/18

Meadcroft,

Attended to
W.H.W.

Have Hayes the phonograph recording man who is working with H & C and sent down to Key West. Have him bring a complete cylinder recording outfit + Extras to make up, acoustic recorders also listening machine also microscope + stand for looking at cylinders record - Bring pieces he has + a fair supply of white + specially dark colored wax recording records, so we can see record colors better in Micro. ~~top~~ Want to record with the 150 (record) knife and also with 40/100 100 (record) knife -

He better come by Mallory line leaving N.Y. on a vessel Tuesday fore & 32⁴⁰ includes meals room + everything - Stays kept well, also have the man from N.York

2

Testing laboratory with his apparatus
Come down also.

Only want one man from testing
Lab as we have lot of bright men
here to assist but if it's absolutely
necessary they should send two
then OR —

If Hayes or the NY lab men
can't make the steamer without
big delay they can come by
train but they should pack
their apparatus at once & send
it ahead by Express, —
Telegraph when either leaves

S
Dear

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | Blue |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols is used in a day message, Other words/characters will be transmitted after the check symbol.

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | Blue |
| Day Letter | Blue |
| Night Message | Red |

The following symbol appears after the check (number of words/characters) and before the word/character indicated by the symbol appearing after the check.

RECEIVED AT 238 MAIN ST.
 ORANGE, N. J.
 235NY GC 28 NL

KEY WEST FLO FEB 8 1918

M P MEADOWCROFT

EDISON LAB ORANGE NJ

HAVE THE NEWARK MANUFACTURER OF THE FIRE PROOF PAINT WE
 USED AT SILVERLAKE SEND SAMPLES OF PAINT CATALOGUE WITH PRICES AND
 FULL DETAILS AND PARTICULARS BY EXPRESS TO KEY WEST

Patton Paint Co
 Newark Mr. White - V.P. t/m
 Bramah Brook 610
 chd. Electric Mr. Boyle

EDISON

1157PM

U. S. NAVAL STATION
KEY WEST, FLORIDA

Feby 8th 1918

My dear Mr MacLowry
just a note to say that
I have arranged with the
Commandant Mr Hunt, with
Whom Mrs & Mr Edison are
stopping, here in a most beautiful
Navy Yard and in a fine house,
and family, to remember Mr
Edison's birthday Feby 11th by
having their room and veranda
decorated with flowers & by

Not over looking him over
his birth day.

I got a few office
room (District Judge's office) in
the Custom house, which
is in the Navy yard for him
and he seems to be delighted
with every thing.

Fine weather about 65°
all the time. Mr. E. caught
7 fine fish (King fish) about three
feet long.

Best wishes
Melchiorus

Pacham is expected
to have left Norfolk
on to day.

a regular decoration, and to
have a few couples come in
in the after noon and evening
and call on them. We will have
Miss Sturge present. All just in
accordance with West Mts. Co.
usage.

The Commandant's "Dance"
is to have a few in the
evening at a dinner she is
giving in honor of her birth-
day. Every thing is very nice
here for them and the Comman-
dant enjoys having them so
much. You see we are

Recd. 2/9/18

Meadowcraft

Please subscribe for
Times, World & Sun to be
sent to me at Key West,
subscription for two $\frac{1}{2}$ months -

Eason

OKMIE ✓ attended 2/9/18

Night Letter

Feb 9. 1918

Thomas A. Edison

came Conningendum

U. S. Naval Station

Key West, Fla.

All arrangements made for
Hayes and Testing Laboratory man
to sail for Key West by Mallory
Steamer sailing next Tuesday,
and take their apparatus and
material Hydrogen Detector,

Fire proof paint, disc phonograph
and newspaper matters have all
been taken care of

sent by W.H. 12/18/08
W.M.W. Measomcoff

February 9, 1918.

Mallory Line,
Pier 30, North River,
New York, N.Y.

Gentlemen:

This letter will be presented to you by Mr. William A. Hayes, who is connected with the Laboratory here. Mr. Edison directs him to go down to New York on your boat sailing Tuesday, February 13th, and to take along on the same boat a trunk and two cases of apparatus needed by Mr. Edison in his work for the Government. Will you kindly oblige Mr. Edison by having this apparatus go down on the same boat with Mr. Hayes.

Yours very truly,

Assistant to Mr. Edison.

A/4006.

AARON HILL
LOS ANGELES, CAL.

Tell Hill to
Send Catalogue
etc to
Mr. Wm. Meadowcroft,
Laboratory of Thomas A. Edison,
Orange, N. J.,
at once

February 9th,
1918 -

Dear Sir:-

Beg to acknowledge receipt of your favor of
January 29th, in which you mention Mr. Edison's recom-
mendation of the HILL GANG DRILL to Mr. Hurley of the
U. S. Shipping Board.

As a direct result of Mr. Edison's recommenda-
tion we have received requests for additional data from
representatives of the Emergency Fleet Corporation.

Am enclosing herewith copy of letter I have sent
to said representatives, expecting Mr. Edison will be in-
terested in it.

I will greatly appreciate your forwarding this
letter and enclosure to Mr. Edison.

Respectfully yours,

Encls.

Aaron Hill

4713

[ATTACHMENT/ENCLOSURE]

February 26th,
- 1918 -

Mr. H. E. Frick,
Emergency Fleet Corporation,
Finance Building,
Philadelphia, Pa.,

Dear Sir:-

THE END: HILL GANG DRILL.

Allow me to express my appreciation and thanks for your favor of January 30th, addressed to Mr. Geo. L. Uman and which he referred to me.

I wish to call your attention to the fact that I have now arranged the HILL GANG DRILL to very effectively cut the building of ship hulls.

Would propose to construct a machine with a 25-ft. span permitting a plate 25 ft. long and any width, to go right through; said machine will drive four chains, a sufficient capacity to carry one hundred (100) drills of 13/16 diameter, with a feed of 5/1000 and 110 RPM, which will go through half inch plate in less than one minute.

I then propose to have another machine in back of this drill press which would have the same span and carrying just several drills to make the vertical lines, such as both ends of the plate, and the rivet holes for the ribs. Second machine will run high speed drills, drilling about three times as fast as the first machine, thus a complete ship plate will be turned out in less than ten minutes. Machines are arranged with gauges, each gauge having a graduated dial for moving the plate in all directions required, transversal and longitudinal, to be set for any spacing desired. All gauges are very massive, and no ordinary usage can throw them out of shape.

The man operating the machine does not necessarily have to look at the plate, he can tell by the dials how the rivet holes are to be spaced, as far as the vertical spacing is concerned. It makes little difference whether the plate

[ATTACHMENT/ENCLOSURE]

H. E. P. Sheet No.

2/0/10/

is rectangular or wedge shaped, providing there is a given distance between the end holes and a given pitch. Each drill unit has a pointer to a graduated steel tape and can be set for any pitch by said tape in but a few seconds. The machine drills in exact line and pitch all holes will therefore absolutely match with corresponding holes in other plates, thus entirely eliminating drifting, reaming, etc.

Through my many visits to ship yards, I find approximately 80% of the rivet holes are meant to be in straight lines. To my mind this percentage can be materially increased.

About 60% of the ship plates are rectangular and a great many of uniform size. These can be drilled in three or four-ply together. The machines are inexpensive in their construction, and take comparatively very little power in their operation.

Hoping this matter will meet with your approval,
I remain in,

Respectfully yours,

Enclo.

WESTERN UNION

TELEGRAM

GEORGE W. E. ATKINS, VICE-PRESIDENT NEWCOMB CARLTON, PRESIDENT BELVIDERE BROOKS, VICE-PRESIDENT

| | | |
|----------------|------------|-------|
| RECEIVER'S No. | TIME FILED | CHECK |
|----------------|------------|-------|

SEND the following Telegram, subject to the terms
on back hereof, which are hereby agreed to

Key West, Fla., Feb. 10, 1918. 191

To W. H. Meadowcroft,
Orange, N.J.

Mr. Edison requests you to instruct
Mr. Emery to ship here immediately by Mallory Line 60
pounds of finest metallic zinc powder also 60 pounds
of petrolatum or vaseline. Weather fine. Work
progressing nicely. Experiments successful. Well
and happy. Letter and details mailed tonight.
Best wishes.

Charles B. Hanford.

(received by W.H.M. at Boonton over wire)

SENDER'S ADDRESS
FOR ANSWER

SENDER'S TELE-
PHONE NUMBER

COPY IT
No. 52.

Feb. 11, 1914.

Mr. Josephus Daniels,
Secretary of the Navy,
Washington, D. C.

My dear Mr. Secretary:

I have devised a plan for taking cargo boats out of harbors which are liable to be mined by submarine mine layers. It also utilizes the small submarine chasers to great advantage.

The plan is to use two chasers six hundred feet apart, running in parallel, between which is a very small steel cable only one eighth of an inch in diameter and connected to proper apparatus. These chasers proceed to sea followed by the cargo boat or boats about half a mile astern and sailing midway between the chasers. If an obstruction is met, the chasers throw a buoy to mark the spot and endeavor to get through in another direction. The cargo boats, of course, stay on signal. Should cargo boats reach the sea where it is inevitable that mines exist, the chasers return to port and notify the regular mine sweepers who proceed to the buoy and investigate the obstruction.

The Navy Officers here think it is all right and a fine use for the 110 foot chasers. I have ordered the wire and will test it with dummy mines in this harbor. There is only one chaser here, one more would be an advantage in these experiments.

Very truly yours,

CuM 22
No. 55.

Feb. 11, 1916.

Mr. Josephine Daniels,
Secretary of the Navy,
Washington, D. C.

My dear Mr. Secretary:

I have just tried some experiments here for turning cargo boats quickly by means of a kite radar to avoid torpedo, an our lowed phone detects the come the moment it is fired by the submarine. We have reduced the turning time we can see me trying it on larger boats and think we can avoid torpedoes if not slower than one hundred and fifty yards. About the necessity of having anything below the submarine itself.

Very truly yours,

M. S. O. II.

DESPATCH.

(Intencive.)

NAVY DEPARTMENT,

Secretary's Office.

(Bureau or office.)

WASHINGTON.

11 February 1918, 191

(Date of message.)

Mr. Thomas A. Edison,
Naval Station,
Key West, Fla.

Congratulations upon your birth-day.
Your friends rejoice in your youthful optimism
and clear vision of national needs. It has
been a privilege to be a co-worker with you.

JOSEPHUS DANIELS.

Copy to Mr. Meaderwelt

Received
Forwarded
(Date.) (Time.) M. (Number.) (Operator.) (Clock.)

(Telegraph system.)

(Officer on watch.)
(Communication office.)

(CONFIRMATION TO ADDRESSEE.)

(COPY)

PURCHASE ORDER

To Thomas A. Edison,
Orange, N.J.

Order No. 17216
GAM/NA

Original

GENERAL ENGINEER DEPOT
U.S. Army

1438 U Street, Washington, D.C.
February 11, 1918.

CONFIRMING ORDER.

Experimental work in Laboratory on
devices listed herein over period
August 1st, 1917 to December 8th, 1917 at cost.

| Laboratory Order No. | Description |
|-------------------------|--|
| 5746 | Destruction of Wire Entanglements..... \$3,096.6 |

The above has been completed.

Prices based on: Your recent quotation.
Shipments via See note above
Marks "

Requisition : 2483
Application: Experimental work performed for War Dept.
Charge to: Engineer Operations in the Field, 1918.

by W. M. Williamson,
Chief Clerk.

[Feb 12?]

Mead & draft

Sent by mail

~~First~~ Bank

~~First~~ draft on First National

Bank of Key West

for Three thousand

1000

Edson

Edson

File Navy

February 12th, 1916.

Mr. Thomas A. Edison,
Report on Order #5013:-

We have been testing out a one-step amplifier connected to one of the receiving stations and have been able to obtain records from a distance of over five miles that were easily read.

Our tests to date have been made to determine the proper winding of the input coils to use with the low frequency sound of the gun and which would give the best results with our recording apparatus. We expect to have uniform amplifier equipment for all three points of our base-line installed this week when we can make observations to determine the degree of accuracy in estimating a source of sound approximately five miles distance.

We seem to have ample power in our receiving apparatus as the record at five miles is very good and easily read, yet the sound of the gun is just barely audible to the unaided ear.

ET

N. H. Holland.
NH

Key West Fla 8/22-18

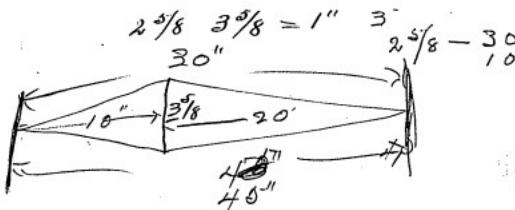
Mr Wm H. Meadowcroft.

Orange N.J.

Dear Mr Meadowcroft

Mr Edison

thinks we should have two extra
Copper Models like the two made
there for us one of them sent to me
at Annapolis the other sent to me
here. Please Mr Jackson to make
up two of them and send



9540 Spring

2/13/1914

E.C.K.

Meadcroft

or see personally Recd 2/15/18

Wrote Klipstein for a pound

Sample of his Kraki uniform dye

I find that the Marines here
look like Hell - On washing some

uniforms turn pink - some after a
while turn to dirty white etc

One man coat well be OK his
pants nearly white, I am under
impression that K makes a
fast dye - We can experiment

with the sample here, dyeing
a piece & then washing several
times - Have K send few all

2

The information he can about
the Kraki dye or put us in
the way of getting an estable
one, or any other dye
like Kraki - send Sample
by ~~air~~ Mail -
parcel Exp.

J. A. Elman

Sent Sample +
instructions from
E. G. Klipstein 2/18/18

674

Form No. 1001

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | B |
| Night Message | |
| Night Letter | N L |

If none of these three symbols appears after the check character of sequence number, the check character will be indicated by the symbol appearing after the check.

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | B |
| Night Message | N |

If none of these three symbols appears after the check character of sequence number, the check character will be indicated by the symbol appearing after the check.

RECEIVED AT

205 HAIN ST.
ORANGE, N. J.

62NY H 15

KEY WEST FLO 913 AM FEB 13-18

VIA H MEADOWCROFT

TELEPHONE NO.

TELEPHONE TO

BY

DISPOSITION

CARE THOMAS A EDISON, LABORATORY ORANGE NJ
ASK MR WOLD OF WESTERN ELECTRIC CO EXPRESS ONE COMPLETE
HEAD PHONE SET EIGHTY OHMS.

SHAFFNER

1138AM

Telegram

Feb 13, 1918.

Thos A. Edison

9^o Commandant

U.S. Naval Station

Mug West, Fla.

I'm sending bank draft

to today - Fine dust and

Petrolatum yesterday by Mallory boat.

Meadowcroft

W.W. 2/12/18
pm

8.20
worm

Call Address "Edison, New York"

From the Laboratory
Thomas A. Edison,
Orange, N.J. Feb. 13, 1918.

Mr. S. C. Shaffner,
U. S. Naval Station,
Key West, Fla.

My dear Mr. Shaffner:

Allow me to thank you for your note of the 8th instant. It was very welcome, and I am indeed glad to learn that some special preparations had been made for observing Mr. Edison's birthday. From your description it looks as though everything would be made very pleasant for him, and I hope that the occasion will be enjoyed by everyone.

A number of Mr. Edison's old associates, composed of men who had been associated with him for 32 years and more got together two or three weeks ago and formed an association called "Edison Pioneers". It was my good fortune to be one, as this year I complete 37 years association with him. On Mr. Edison's birthday, 43 of us met at Luncheon in New York to celebrate the occasion and I can tell you it was a very pleasant occasion and we fellows who had been friends for so many years enjoyed it greatly. We sent Mr. Edison a telegram signed by all of us.

I am glad to learn that you are all fixed up with such pleasant quarters, and also that your lot is cast with such a fine lot of men. I have a letter from Mr. Hanford this morning in which he tells me some of the interesting things that have been happening of late. I am hoping to hear some good news concerning your more recent tests.

We have had two or three days respite from zero weather. Snow, or to speak more correctly, ice, is melting on the streets, and if the present mild weather continues, we shall be having clear roads in a few days, - a consummation to be devoutly wished for. It is a great pleasure to learn that you are having such find balmy weather, and I am sure you will all appreciate your good luck.

With kindest regards to yourself and all the boys,
I remain,

Sincerely yours,

A/4657.

W. H. Leedowenwyg

Feb. 13, 1918.

Mallory Line,
Pier 38, North River,
New York, N.Y.

Gentlemen:

We are sending down by your Steamer to Mr. Edison at Key West, seven barrels of plaster of paris for his use in Government experiments. The barrels are addressed:

S. G. Warner,
c/o Commandant,
U. S. Naval Station,
Key West, Fla.

(Signature)
TAB

Mr. Warner is one of Mr. Edison's assistants, and we shall be obliged if you will kindly forward these barrels at once.

Yours very truly,

Assistant to Mr. Edison.

A/4604.

WESTERN UNION

TELEGRAM

GEORGE W. E. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

DELVIDERE BROOKS, VICE-PRESIDENT

| RECEIVER'S No. | TIME FILED | CHECK |
|----------------|------------|--------------------------------|
| | | New York, N.Y., Feb. 15, 1910. |

SEND the following Telegram, subject to the terms
on back hereof, which are hereby agreed to

191

To Thos. A. Edison,
c/o Commandant,
U.S. Naval Station,
Mey West, Fla.

Business houses closed
Monday and yesterday. Have seen Roeblings this morning.
Will ship cable today 1/8" diameter 49 wires very strong
aircraft cable.

Meadowcroft.

(sent from N.Y.)

SENDER'S ADDRESS
FOR ANSWERSENDER'S TELE-
PHONE NUMBER

WESTERN UNION

NIGHT LETTER

GEORGE W. C. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

DELVIDERE BROOKS, VICE-PRESIDENT

RECEIVED AT

180NY H 23 NL

FT MYERS FLO FEB 14-18

WM H MEADOWCROFT

EDISON LABORATORY OAKBROOK IL

SHIP AT ONCE BY PARCELPOST ONE VOLT METER SAME AS
 ONE ON THE PANEL THAT MR LANGLEY MADE FOR CHARGING
 LAUNCH BACK CONNECTED.

FRED KNOTT Off

1017PM

Mr. Meadowcroft

Norton Elec. Instrument Co.
 Manchester, Conn.

Type H. Voltmeter 150 Scale

Langley
2-15-18

Mr Langley
 Please tell me what
 it is so I can order it
 & from whom
 W. H. Meadowcroft
 2/15/18

WESTERN UNION

TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. C. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | B |
| Night Message | N |
| Night Letter | N L |

If none of these three symbols appear after the check mark of a message, it is a day message. Otherwise it is a night message. Other symbols appearing after the check mark indicate the class of service.

| CLASS OF SERVICE | SYMBOL |
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| Day Message | |
| Day Letter | B |
| Night Message | N |
| Night Letter | N L |

If none of these three symbols appear after the check mark of a message, it is a day message. Otherwise it is a night message. Other symbols appearing after the check mark indicate the class of service.

RECEIVED AT 238 MAIN ST.
168NY GC 28 NC ORANGE, N. J.

KEY WEST FLO FEB 15 1918

WM H MEADOWCROFT

EDISON LAB ORANGE NJ

I THINK DEANS ON AEROPLANE EXPERIMENT SHOULD COME TO KEY WEST WITH HIS APPARATUS IF HE HAS ONE GOOD ASSISTANT BRING HIM ANSWER WHEN HE CAN COME

EDISON

1036PM

Telegram

Feb. 16, 1918

Thomas A. Edison

c/o Commandant,

U. S. Naval Station

Key West, Fla.

Bearns can leave in week or
ten days - Waiting ^{to test} ~~for~~ new apparatus
being made in shop.

Meadowcroft

W.U. 2/16/18

Sent by

1. pm W.W.M.

February 16, 1916.

Norton Electrical Instrument Co.,
Manchester, Conn.

Gentlemen:

I beg to confirm the following telegram
sent to you this morning:

"Please ship by Parcel Post insured one
Type H Voltmeter, 150 Scale to Thomas A. Edison, Fort
Myers, Florida. Confirming order follows.
Thomas A. Edison"

Trusting this has had your prompt attention.

Yours very truly,

Assistant to Mr. Edison.

~~2~~ Telegram

Feb 18/18

Thos. A. Edison

% Commandant,

U. S. Naval Station

Key West, Fla.

Deans has no assistant. Can

you get one down there or
shall we hunt around. Am
attending to Reinstein matter.

W. 2/18/18 Meadowcroft

Sent W 9:55 AM
WM

February 18, 1916.

Commandant,
U. S. Naval Station,
Key West, Fla.

My dear Sir:-

I have sent you the following telegram
this day, namely:

"Several shipments of
material have been made addressed
to S. G. Tanner either your care
or in care U. S. S. Sachem. Marked
with letter H in circle or diamond.
Kindly receive them. Yours etc for
Theodore Edison and Tanner who are
going down there."
Signed Edison Laboratory"

Herewith I hand you bill of lading for
seven barrels sent down by the Mallory Steamship on the
lith instant. There will be other material besides
this, in additional shipments.

Yours very truly,

Assistant to Mr. Edison.

A/4683.

Enclosure.

Feb. 18, 1918.

Mr. E. C. Klipstein,
c/o A. Klipstein & Co.,
654 Greenwich Street,
New York, N.Y.

Dear Mr. Klipstein:

Will you please deliver to
boner, the one-pound sample of fast dye for
cotton khaki uniforms, together with full instruc-
tions, as per our telephone conversation this
morning. I will send same down to Mr. Edison
at once.

Yours very truly,

Assistant to Mr. Edison.

THE SECRETARY OF THE NAVY.

WASHINGTON.

February 18, 1918.

My dear Mr. Edison:

I have your letter of the 10th instant.
I am very glad that you find the conditions at Key
West favorable for experimenting. I agree with
you fully in the absolute necessity for training
and training and training. I thank you for the
suggestion that we send other boats down for train-
ing and I will take it up at once.

With sentiments of esteem and high re-
gard,

Sincerely yours,

J. W. BREWER

Mr. Thomas A. Edison,
c/o Naval Station,
Key West, Florida.

THE SECRETARY OF THE NAVY.

WASHINGTON.

February 18, 1918.

My dear Mr. Edison:

I am in receipt of your two letters of February 11th, telling about the plan which you have devised for taking cargo boats out of harbors which are liable to be mined by submarine mine layers, and your experiments for turning cargo boats quickly by means of a kite rudder. We are very much interested in these experiments.

Sincerely yours,

J. W. D. [Signature]

Mr. Thomas A. Edison,
c/o Naval Station,
Key West, Florida.

ADDRESS REPLY TO
THE SECRETARY OF THE NAVY
AND REFERRED INITIALE

23754-26/101
Op-35-G

NAVY DEPARTMENT
WASHINGTON

N&B

19 February, 1918.

Mr. Thos. A. Edison,
U.S. Naval Station,
Key West, Fla.

My Dear Mr. Edison:

Your two letters of 11 February 1918 have been received, and I thank you very much for informing me in regard to your work at Key West.

I am awaiting with interest a further report of your experiments with the kite rudders. A device which could be used quickly and will permit a ship to turn rapidly will undoubtedly be of great value.

The mining division of the fleet have been carrying out numerous exercises in mine sweeping and "mine searching". The last named is somewhat similar to the work you have inaugurated at Key West, but a larger wire cable was employed.

Referring to your suggestion in regard to sending additional submarine chaser to Key West, I have the pleasure to inform you that several more will be sent south as soon as it is possible to outfit and commission them.

I assure you, Mr. Edison, that your work for the Navy is greatly appreciated, and the information in regard to your plans and experiments is received by me with great interest.

Sincerely yours,

Joseph Daniels

A. KLEINSTEIN, PREST.

W. H. JACKSON, VICE PRESY.

E. C. KLEIPSTEIN, TREAS.

CABLE ADDRESS:
KLIPSTEIN, NEW YORK

КАТАЛОГИ № 1973

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PHILADELPHIA, 80 & 82 N. FRONT ST.
PROVIDENCE, 125 FOURTH ST.
CHICAGO, 145 & 147 WHINNIE ST.
CHARLOTTE, N. C., COMMERCIAL/ME BANK BLDG.

NEW YORK February 19, 1918.

Mr. William H. Meadowcroft,
Laboratory of Thomas A. Edison,
Orange, N.J.

Dear Mr. Meadowcroft,

I have handed the bearer of your letter of the 18th instant a product and dyed sample of FAST KHAKI, together with directions for using, and I shall be glad if they will be of use to Mr. Wilson.

Yours very truly,

E.C. Kipstein
per 20.

4700

100%

ALL ORDERS ARE ACCEPTED SUBJECT TO DELAYS OCCASIONED BY ACCIDENT, STRIKE, FIRE OR OTHER BUSINESS INTERRUPTIONS OTHERWISE SPECIFIED. QUOTATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AND MADE FOR PROMPT ACCEPTANCE.

ADDRESS REPLY TO
THE SECRETARY OF THE NAVY
AND REFER TO INITIALES
AND RD.

NAVY DEPARTMENT

Op-14-A-D 2/18
MD 28905-820

WASHINGTON

FEB 20 1918

NBB

Commandant Hamlin —

Sir:

Referring to your letter of February 11, 1918
the Commandant of the Sixth Naval District has been
instructed to make such disposition of the REPOSO II,
S.P. 198 as may be necessary to meet your requirements
and to advise you accordingly.

Very respectfully,

George Daniel
Secretary of the Navy.

Mr. Thos. A. Edison,
U.S. Naval Station,
Key West, Fla.

✓

[ATTACHMENT/ENCLOSURE]

Refer to file
38114-22

HEADQUARTERS, SIXTH NAVAL DISTRICT.

Charleston, S. C.

February 23rd 1918.

From:

Commandant.

To:

Commanding Officer, U. S. S. "Reposo II" S. P. 198

Copies 2 to Operations.

Copies 1 to Section Commander Jacksonville Fla.

Subject: Orders.

Reference:

Operations letter Op 14-A-D 2/18 28905-820 of
Feb 19 1918 (b) Orders of January 9 1918 Comdt.
to Reposo.

1. Your orders are so far modified that you will consider the REPOSO II as temporarily detached from duty in the Sixth Naval District; and you will place the REPOSO II at the disposal of Mr. Thomas A. Edison, and operate her in compliance with his desires and orders.

(S) A. F. Rogers
Acting.

1st Endorsement,
U. S. S. "REPOSO II" S. P. 198.
Naval Station, Key West, Fla.
February 25th 1918.

1. Received, this date.

(S) W. S. Harris

2nd Endorsement,
U. S. S. "Reposo II" S. P. 198.
Naval Station, Key West, Fla.
February 25th 1918.

1. Reported in accordance with above orders.

(S) Thomas A. Edison.

[ATTACHMENT/ENCLOSURE]

and in order
If convenient, to avoid conflict of orders, will you
arrange to have the "U. S. A. Report" 2nd. M. 198
which has been placed at my disposal for
experiments here detached from the Sixth Naval District
temporarily and ordered to operate on detached
duty under my orders - Copy in ^{order} Secy to.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HEWITT,
Vice President.
WILLIAM L. BAUNER,
Chairman.
THOMAS ROBINS,
Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

FEB 20 1918

To the Members of the Naval Consulting Board,

Dear Sirs:

Please be advised that the next meeting of the
Naval Consulting Board will be held on MAR 2- 1918
in the Carnegie Institution, Washington, D. C.

The preliminary meeting begins at nine o'clock,
and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS

Secretary.

By *Alvin L. Loomis*,

No. 54

February 23, 1918.

Honorable Josephus Daniels,
Secretary of the Navy,
Washington, D. C.

My dear Mr. Secretary:

I have been experimenting on launching collision mats to save cargo boats after explosion of torpedo. We can do it within twelve seconds. I am building a rough model of a cargo boat on a scale of 1 in 25 for ease in arranging ten collision mats on each side of boat, each mat 40 feet long and 25 feet deep, rolled up on a six-inch pipe, any one of which can be launched in 15 seconds so as to fully cover the hole. These mats are to be rolled up and placed 15 feet away from sides of boat when not in use, so the explosion will not affect any of them and they will not interfere with anything or with the launching of the regular life boats. I was surprised to know that all the officers here are unanimous in believing this scheme will work.

So far the kite rudder works fine; I am making several so as to test on the DOLPHIN when she returns.

With the towed 'phone, the kite rudders and collision mats, we should increase the difficulties of the Germans in sinking our boats.

These are all attachments that cost little, require no change in ships and are easily operated.

Very truly yours,

[ATTACHMENT/ENCLOSURE]

Mr.

Matthew Cawelti

Day of May

My dear Mr Secretary

No 54 - I have been
Experimenting on launching
Collision Mats to save cargo
boats after explosion of torpedo.
We can do it within 12 seconds
Your building rough model
of cargo boat ~~sink~~ on a
scale of 1 in 25. for ease in
arranging 10 Collision mats on
Each side of boat. Boat must
40 ft long & 35 ft. deep rolled
upon a 16 inch pipe, any
one of which can be launched
in 15 seconds so as to fully
cover the hole. These mats

[ATTACHMENT/ENCLOSURE]

2
rolled up + placed
are to be 15 ft away from sides
of boat when not in use
so explosion will not
affect any of them.
They will not interfere
with anything or with
launching off the regular
lifera boats. I can
assured to know that
all the officers here
are unanimous in believing
this scheme will work.

So far kite rudder works
fine, I am making several
so as to test on Dolphin

[ATTACHMENT/ENCLOSURE]

3

With your suggestions.

With the torpedofire, the
kite rudders and collisions,
we should should increase
the difference of ~~our~~ ^{for} the
Germans in sinking our boats.

These are all attachments
that will require no changes
in ships & a little practice.

Very truly yours,

E

- Feb 23 - 1978

Meal account

Letter and dozen via Murphy
line, 50 Amberal records
of the old band songs & my
favorites used by Religious
demonstrations in India.
Cheq to me personally

Thank you whenever I have
you @ East Harry you'd.

These they already know
one rank band collect
deserts —

What about that of 250.
+ 50 Records I asked you to
have Marjorell ship me via Medley
line You will represent them in Germany

LEASED VESSEL TO LAGRAM

U. S. Naval Station, Key West, Fla.,
Feb. 25, 1916.

J. J. Butler,
Chief Clerk General Board,
Navy Annex, Washington, D. C.
(For Honorable Edward R. Hurley,
Chairman Shipping Board.)

There are numerous small vessels in Southern ports which can be used for carrying coal from Mobile to Havana returning with sugar period There are several refineries at and near New Orleans which have several thousand tons weekly excess capacity period Weather for next five months calm period Amount handled can be doubled if small tugs used to tow several vessels period Understand lack of coal may result in political disturbances period Coal of high quality six dollars ten cents P. O. B Mobile semicolon sells at seventeen dollars Havana period Government could start this business by arranging to operate through a selected firm and insuring boats and cargoes period The high prices would prevent any loss to Government period I am in touch with the situation period If you are interested send one of your sanguine young men down here to investigate the subject period I will be here for two months period I see by this morning's paper you have set aside some shipping for carrying sugar from Cuba period There are more than twenty some one thousand ton barges carrying lumber from Florida and Gulf ports to Cuba who return empty semicolon also a host of sailing vessels who return empty period All of these can haul sugar for Central West refineries and now Savannah refinery as return cargo

Thomas A. Edison

PLAIN ENGLISH

~~Night Letter~~

Night Letter

Feby 23, 1918

Thos A. Edison

Kew, West, Fla.

Electrical Testing Laboratories
ask how long you want to
keep Mr. Little. They want him
in New York if possible by
Sunday March second in
connection with some important
tests affecting legislation at
Albany. Can you get through
with him to allow for this.
Answer.

sent by W.H. M^o Meadowcroft
2/23/18 W.W.

Feb. 23, 1918.

Mr. Aaron Hill,
Los Angeles, Cal.

Dear Mr. Hill:

I forwarded your letter of the 9th inst. to Mr. Edison, and he is very glad to learn that you have received requests for additional data from representatives of the Emergency Fleet Corporation.

Mr. Edison wishes me to write to you to say that he suggests you send immediately a catalogue and description to Mr. Henry Ford at Detroit. Please address this to Mr. E. G. Liebold, General Secretary to Mr. Henry Ford, Detroit, Mich., and I will write to Mr. Liebold that it is coming so that he can look out for it and bring it to Mr. Ford's attention personally.

Yours very truly,

Assistant to Mr. Edison.

A/4715.

DEPARTMENT OF THE NAVY.
GENERAL BOARD,
WASHINGTON.

OES

February 23, 1918.

My dear Mr. Edison,-

Mr. Hanford's letter of February 20 requesting a copy of "Handbook of Mine Sweeping with Water Kite" received this morning. I immediately got in touch with Captain Hulsey and enclose "Mine Sweeping Manual", which as the latest edition, appears to be the publication you want and I hope it will be of use to you.

I saw Colonel Milliken several days ago and he seems to be very much pleased with the outlook of the work upon which he is engaged. He is at New London today for a meeting of the Submarine Board, of which Dr. Whitney is also a member. Upon his return I shall call on him to get a line on any new developments and report them to you.

Yours sincerely,

James Butler

Mr. Thomas A. Edison,
c/o Commandant Naval Station,
Key West, Fla.

6:30 pm. Saturday

Your message instructing me to forward message to Mr. Hurley received. It has been put on the wire to him.
Butler.

Meadcroft.

Feb. 26/18

Please ask Langley to reward two
Regular Bell phones -

so that the total prevalence
is 400 chairs, ^{or around that} instead of the
regular 90 chairs -
but I want them in
4 sections of 100 instead
of one section of 400 -

But I want the same number
of chairs in each section
Each section to have its

2

Ends go to separate bonding posts.



So as to enable me to connect
all in series or all in
parallel or
& to send current flowing
how they should be
connected for series &
parallel - This for
first experiment by express

Bath phones to 62
alike -

Elson

Feby 26/1918

Kay Went Flea
Feb. 26, 1918.

My dear Mr. Meadowcroft:

Mr. Edison directs me to
ask you to send him these books.

Very truly yours,
Charles B. Thompson

4964

[ATTACHMENT/ENCLOSURE]

The Atlantic Monthly Advertiser

ATLANTIC WAR BOOKS

SHOCK AT THE FRONT

By WILLIAM T. PORTER, M.D.

Dr. Porter was sent abroad by the Rockefeller Foundation to investigate the cause and treatment of shock. His search led through many interesting adventures and to the very important result which he modestly sums up in the words, "The cause of shock was found, and a new remedy."

But this book is much more than the chronicle of a physician's discovery. It is an absorbing war record of an acute and imaginative observer with a remarkable gift for expression and a keen eye for significant events on the fighting front.

Attractively bound in cloth. \$1.25

HEADQUARTERS NIGHTS

By VERNON KELLOGG

When the war broke out, Professor Kellogg was a neutral, a pacifist, and an admirer of Germany. In the hope of relieving human suffering, he went to Europe, became editor of the Committee for Relief in Belgium at German General Headquarters, and lived for many months on intimate terms with the Kaiser's commanders in the west. He worked with them, dined with them, argued with them, heard them expound their creed of the *Attacke* in defense of their country.

Now, in the "confessions of a converted pacifist"—an unparalleled record of the revolting workings of German militarism among the people it has crushed—this noted biologist conveys the Germans on their own biological ground and proves that "Germany must be converted to be a good Germany or not much of any Germany at all."

A handsome example of bookmaking. \$1.00

THE WAR AND THE SPIRIT OF YOUTH

Amidst the murmurings, the questionings, the bitter cries of world sorrow, the clear, confident note of this inspiring little book sounds like a trumpet. Written from three different points of view by a Frenchman, an Englishman, and an American, the volume contains:

YOUNG SOLDIERS OF FRANCE
JUVENTIUS CHRISTI
THE SOUL'S EXPERIENCE

By Maurice Barres
By Anne C. E. Allinson
By Sir Francis Younghusband

All these authors unite in finding the hope of the world in the willingness of youth to follow the gleam of an ideal and to fight and die that there may be more light for the souls of men.

Charming bound and printed. \$1.00

Atlantic books are sent postpaid anywhere on receipt of price

THE ATLANTIC MONTHLY PRESS
BOSTON · MASSACHUSETTS



WILLIAM LOVATT

- INVENTOR OF -

The Lovatt Piston Packing Rings

216 Broad St., GREENPORT, L.I., N.Y., Feb 26, 1918

Mr. H. H. Macdonough
General Board Room
May Annex
Washington, D.C.

(4798)

Dear Sir having tried
all my endeavours to locate Mr. Thomas Edison -
last Jan 1917 before the war started and so
many ships being sunk i invented a certain
mine destroyer & sent it to Secretary Daniels and
it was in due time it was granted to Mr. Edison
for i got a letter from his board stating that it
was under their consideration and that i should
have from them soon having not heard anything
from them when Mr. Edison was in greenport i
sent this letter to Mr. Edison by his tool master
that was on board the boat & with Mr. Edison
asking Mr. Edison to look at the letter so i could
get the letter back for the letter had my Corresponding
number since then i cannot locate Mr. Edison
and i want my letter so if you can do me a favour
by getting me my letter i shall be thankfull for
if my device had been on them Consegres when

in this and common
they where gauging the S.S. Tuscarora. The combe
have caught the Submarine for the the tele-
scope arrangements for gauging your little boat.
your boat attachment on your Block & fall
your grapple would have hit it. or your
Submarine and your boat would done the rest
Mr Robbins says that there is some fears that
we making something the same as my device will
soon be kind enough to let me know when they sent
in there application mine was sent to my device
12 months ago last far long before this was started.
They are making a machine on the same principle as
mine as someone give my device and throw me
down when i sent my device to Mr Daniels a little
sum i would give or get him a set of drawing you know
it was around April when i got my letter from Mr
Edison Board saying as i should hear from them
and now it is 10 months and have not heard anything
will you Please to give this note to my Edison
re. i sent to Mr Edison in Orange and it was
sent back to me now i am only asking my rights

i remain yours very

Truly

WM. LOVATTE,
210 Broad St.,
Greenport, L. I., N. Y.

N. S. O. 14.

DESPATCH.

(Reference.)

NAVY DEPARTMENT,

GENERAL BOARD

(Board of Trade)

WASHINGTON.

February 27, 1916.

(Class of message.)

Thomas A. Edison,
Naval Station,
Key West, Florida.

Delivered copy of message to Herbert Hoover personally who read it with interest and will refer to his sugar man period. Mr. Hurley returned this afternoon and I delivered copy to him in person period. He had received relayed message this morning period. Is much interested and will probably send man to investigate and confer with you period. Hurley will communicate with you direct period.

JARVIS BUTLER

Received M. (Operator.)
Forwarded (Date.) (Time.) (Number.) (Check.)

(Telegraph system.)

(Offered on
(Communication office.)

(CONFIRMATION TO ADDRESSEE.)

DEPARTMENT OF THE NAVY,
GENERAL BOARD,
WASHINGTON.

CEJ

February 26, 1918.

Mr. Thomas A. Edison,
Naval Station,
Key West, Fla.

My dear Mr. Edison:

Colonel Lillikan came in the office Tuesday afternoon and gave me a very interesting account of the developments of the work he is engaged upon which I am sure you will be interested in and when an opportunity affords I will write or tell you in person as much as I could grasp as a layman. Some of the work he has been connected with has been incidental to his own particular scope and while he did not hesitate to talk frankly about it for your information, I gathered that he preferred I should not make a written report on the subject it having to do with new types of mines particularly the magnetic mine, this work having been done for the Ordnance Department and not for the Signal Corps with which Lillikan is associated. They are agreed with you that the magnetic type is not useful for some purposes but developments are progressing which will be advantageous.

Several visual signal apparatus have been developed with which they are highly pleased. I am keeping memoranda of the conversations with Colonel Lillikan which may be of interest to you when you return or earlier should your work approach these lines.

As I wired you yesterday I called on Food Director Hoover and handed him a copy of your Purley telegram of February 23rd which he said he would refer to the men handling the sugar question.

I had been on Mr. Purley's trail and just after seeing Mr. Hoover learned of his return to Washington and went down and delivered a copy to him. He had only a few hours before received the original relayed message and was therefore familiar with the subject and in my presence sent word to Mr. Carry, the Director of Operations of the Shipping Board, to send a man down to investigate the situation as you suggested. Since the telegram first came into my hands I have made some little investigation on my own hook which may be of interest. The difficulty of using wooden ships of more than five years age is that insurance can not be obtained on ~~the~~ or cargoes in such bottoms. Bilge water, it seems, is bound to come through and coming in contact with the lowest tiers of sugar will cause a rapid melting from the bottom upwards. For that reason sugar is generally carried only in steel ships or wooden ships where this seepage is next to impossible. Of course the old hulks that have been turned into barges are very useful for cargo such as lumber and coal where the interference of water does not damage the cargo.

I did not have time, or rather, Mr. Hurley did not have time for me to make any comments on your telegram and it would not have been appropriate for me to do so anyway. In case his order which was given to send a man down should be intercepted it will be because the Board or some subordinate assumes the conclusion that the 1,000 ton barges which you refer to are of an age that would not permit insurance on sugar cargoes.

If an investigation is not made by the Shipping Board as you suggest, for this reason, and you know these bottoms ~~are~~ capable of being used as you suggest, I hope you will bring it to Mr. Hurley's attention again or authorize me to do so.

The Ship Protection Committee, of which Commissioner Donald of the Shipping Board is Chairman, is hard at work and a Sub-Committee, of which Admiral Winterhalter of the General Board is Senior Member, is also engaged on the question. Your letter to Mr. Daniels of February 23rd on the subject of collision mats, I think would be very interesting to that committee. It may be that the Secretary of the Navy will so refer it but in the interest of quick action I wish that a copy could be sent to Commissioner Donald.

The weather here has been delightful this week and I hope that it is a sign of an early spring. We will all be very glad to welcome you back here again when you decide to return.

With kindest regards.

Yours sincerely,

Jamie Butler

Josephus Daniels
Personal

Please ask Attorney General
Gregory if he will not have his
~~subordinates~~ ~~the trial~~
New York Representative delay any action
against my phonograph
Works under Sherman law
until April 15. On
receipt of ^{recent} Supreme
Court decision I
immediately mailed
notice to all my dealers
abrogating all Contracts
so as completely with the
decision but these
Contracts required thirty
days notice ~~or~~

hence I pack the "The Decline
& otherwise the matter
will be so serious for
me that I shall have
to abandon all my
expectations here and
return north. I have
already reflected very
carefully over a

~~prolonged~~ 100

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
March 1918**

March 1, 1918.

The Atlantic Monthly Press,

Boston, Mass.

Gentlemen:

Will you kindly send to me at the above address, the three following books advertised by you in The Atlantic Monthly Advertiser:

"Shock at the Front"
by William T. Porter, M.D.

"Headquarters Nights"
by Vernon Kellogg.

"The Lat and the Spirit of Youth".
by Maurice Barry.
Anne C.E. Allinson,
Sir Francis Younghusband.

and make bill for same against Thos. A. Edison.

Please be sure to have the books addressed to me and not to Mr. Edison.

Yours very truly,

Assistant to Mr. Edison.

A/4764.

THE SECRETARY OF THE NAVY.

WASHINGTON.

March 1, 1916.

My dear Mr. Edison:

I have been thinking a good deal of late about the question of a laboratory. This has been brought prominently to my attention lately by a resolution which was unanimously carried by the Naval Consulting Board at its last meeting in Washington, to the effect that a start on a laboratory should be made at once in Washington.

As I understand it, your views are that a try-out station or shop is needed in the Navy for quick production and that New York is the best market for labor and material in such an establishment. In this I agree with you, but what seems to me to be rather urgent just now is that we should have an office down near the river somewhere in Washington to which might be attached a laboratory for experimental and research work. This would be useful in trying out some of the devices and suggestions made to the Navy Department.

As we have the Bureau of Standards and the Bureau of Mines here and the Indian Head Works I feel that right here under our noses we might do a great deal of useful work during the war, and possibly after the war the question of a manufacturing establishment might be decided either as an extension of this laboratory or as an independent plant located somewhere else.

The members of the Naval Consulting Board are pressing me from time to time to do something. They say that there is a dire necessity that some action be taken and some place be provided at an early date. I have hesitated because I want your full co-operation in everything done in this matter, and I am writing you now to ask if you will not agree to the plan as outlined in this letter, in this way making the recommendation of the Naval Consulting Board unanimous by the vote of its President, so that I may go ahead.

I look upon this as a very important and a very urgent matter and I shall await your favorable reply with interest.

Sincerely yours,

Mr. Thomas A. Edison,
Key West, Florida.

U.S. SHIPPING BOARD BUILDING
1319 F STREET NW.

UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
WASHINGTON

March 2, 1918.

Mr. Wm. H. Meadowcroft,
Assistant to Mr. Edison,
Edison Laboratory,
Orange, New Jersey.

Dear Mr. Meadowcroft:

Thank you for your letter of the 28th ult.
We will communicate with Mr. Mallory very shortly as
he no doubt has information of value to us.

In our investigation of cellular aggregates,
we propose to include tests of concrete cylinders made
up with the metal tubes similar to the ones used in the
Edison battery. It is necessary, however, to eliminate
the perforations and use heavier gauge metal.

May we call upon you later for a small
quantity of this material for our tests?

Very truly yours,

H. Wells
Concrete Engineer, Department of
Concrete Ship Construction.

4781

(4793)

Key word file 3/3.18

Mr Wm N. Meadowcroft.

Orange N.J.

My Dear Mr Meadowcroft.

Your favor 27th ravels

mentioning a bill from the Western Electric Co. I am "OK" in this bill as I know we got the material. I ordered and record it, but have never seen a bill for it. Please ask the W.E. Co. no word to see that the price of \$37.90 is correct for

"1 Pair of head receivers." \$37.90, this looks high. Matters him going along slow but think we are accomplishing quite a little. Moon is about the worst r.v.r. to damn contemptable to describe in the English language. He has not good sense. ~~so~~ We all, including Mr. E. think he is off "under the hat". Still he has the cunning ability to deceive Mr. E. and disorganize the whole crowd. All on the Reposo II hate him and treat his acts with contempt. The Sachem is here with the same effect of disloyalty and scattering as before. so different from Captain Harris and Orlo of experienced gentlemanly bearing. Mrs & Mrs Edison notice the difference so much. I have been so handicapt so much ~~by~~ by having to handle such as

the above Sachsen, Moor, Hawley & malely;
no one but a bunch of incompetent, dishonest,
jealous, "Rough Riders" exception to this rule
is Harris and crowd. Kneismus, Silver, Wolfe,
Harford, Thompson. Dean has just arrived and
have hopes of him being ote as he seem to have
been from a diffent stock.

Burns has been operated on and his
hand is bandaged up. Making him practically
useless and he misses Hawley.

I am goind to do my darndest to
work the thing through Not withstanding
the unnecessary hanclcups.

The Battng ~~for~~ funeral and boths care in ote
in fact every thing is him that I ordered.

Thanking you for interest and efforts.

I am sincerely yours

Alfred C. Ladd

March 4, 1918.

Honorable Josephus Daniels,
Secretary of the Navy,
Washington, D. C.

My dear Mr. Secretary:

In reply to yours of March 1st regarding laboratory, permit me to say that my whole experience, covering a period of over fifty-two years, sixteen to eighteen hours daily, in over fifty different branches of business, is dead against having a constructing laboratory at either Annapolis or Washington. The very heart of such a laboratory is rapid construction, and there is no place in this country where this can be done successfully except within one hour's journey of New York City, the market from which everything can be obtained quickly.

There is no objection--and in fact it is the right thing to do--to having the executive and planning office at Washington, which has the authority, the data and the money and where the plans could be all worked out. But the moment the blue prints are ready for reduction to a machine Washington would be a disaster for the constructing shop to be there, where weeks would be wasted in getting material.

There is no analogy between the Bureau of Standards and Mines. The proposed laboratory is to build anything from a submarine to a microscope and is not a research laboratory; it is a constructing laboratory--more properly a universal machine shop--whose specialty is rapid construction by special tools and system of working.

Of course the board can do what in their judgment they think best, but they cannot expect me to agree to recommend what I firmly believe will be a failure to give rapid production. I am so deaf that I have seldom attended meetings of this consulting board and am so entirely out of touch with it that it seems to be a species of deception for me to continue as its head, so I think I had better disconnect and work direct for the Navy, the board electing a young and aggressive man in my place.

Very truly yours,

[ATTACHMENT/ENCLOSURE]

Colon
H. S. Marine Station May Street Flr
Hon. Josephine Daniels, Secretary of the Navy, Washington D.C.
Mar. 4, 1918
(Laboratory)
Sally Warren - Marine M. Scientist
In reply to yours of March 1 regarding ~~interior~~
permit me to say: ~~that~~ period
My whole experience covering ~~as~~ ^{from} ~~experience~~
of over 52 years 16 to 18 hours daily
in over 50 different branches of
business is dead against having
a Constructing Laboratory at
either Annapolis or Washington
The very heart ^{tent} of such a laboratory
is rapid construction and there is no
place in this Country where
this can be done ^{successfully}, except within
one hours journey of New York
City the market from which

[ATTACHMENT/ENCLOSURE]

2

Everything can be obtained
quickly.

There is no objection ~~as in fact~~
~~is~~ the right thing too do to have
~~executing planning~~
the office at Washington which
has the authority, the data,
the money & where the plans, ~~are~~
all worked out. But the
moment the blue prints are
ready for reduction to a machine
Washington would be a disaster
for the Constructing shop. to be
there whole weeks worked be wasted
in getting material

[ATTACHMENT/ENCLOSURE]

3

There is no analogy between the
Bureau of Standards & Mines
The proposed laboratory is to
build anything from a
Submarine to a Microscope
it is not a research laboratory
it is a Constructing Laboratory
~~shop~~ more properly a
Universal Machine shop
whose ~~specialty~~ ^{specialty} is Rapid
Construction by special
Tools ~~and~~ a system of working
Of course the Board can do

[ATTACHMENT/ENCLOSURE]

4

what in their judgment they
think best best they cannot
expect me to agree to recommend
what I firmly believe will
be a failure to give rapid

production. I am so deaf ~~that I have seldom attended meetings of the Consulting~~
~~gallin' off', of all that has to do with the~~
~~Board & am entirely out of touch with it that if~~
~~head of the Consulting Board~~

seems to be a species of deception
for me to continue as the head so
I think I better disconnect

I and work direct ~~and not~~ for
the Navy. The Board Electing
a young & aggressive man in
my place - Very truly yours
E

THE JEFFERSON
Class H. J. Revere, Mgr.

Mon. 1/18
KEY WEST, FLA. March 1, 1918.

My dear Mr. Meadowcroft,

May I ask that you take care of this matter for me, please, by turning over my request to the proper parties.

I would like to have a tank of electrolyte for the Edison storage Batteries. Those that were in my batteries leaked out so I am sorely in need of it. Meanwhile I shall make arrangements to borrow some from Mr. Shaffner.

Also will you kindly have the Storage Battery mail me all the information (literature) on the Edison Battery possible particularly in regard to the Types B, A, and M cells. I think the pamphlets they usually send out with these batteries will do but if they have anything else — any other "dope" on the care

THE JEFFERSON
Class. H. J. Roberts, Major

KEY WEST, FLA.....191

etc of the battery I should certainly appreciate
it. Please have them mail it ^{to me} in case of the
commandant as I do not know how long
I shall stay at this apology for a hotel.

The weather here is certainly fine. The
accommodations are very poor and prices are
high in this town. I had a very enjoyable
trip down, but will be glad to see the
Laboratory again.

With sincere thanks, I remain
Respectfully yours
William Deane

To Commandant
U.S. Naval Station
Key West,
Florida

With Mr. Edison.

4815

U. S. NAVAL STATION
KEY WEST, FLORIDA

Mar. 4, 1918

My dear Mr. Meadowcroft.

I am enclosing a sketch of a simple optical device which I believe can readily be obtained from some New York dealer in optical instruments. Will you kindly secure this article and it to me at Key West? Mr. Edwin has a scheme for extending the use of the sextant for navigation at night and we need this device to make an experiment.

It consists of a simple cylindrical mirror of approximately the dimensions shown mounted in some sort of mounting which we can

adopt for our purpose.

We are making satisfactory progress. Last week we demonstrated successfully the use of the sea anchor in reducing the space necessary to turn ship. We made the experiment on the N. J. D. Peter a 900 ton gunboat and succeeded in reducing her turning circle to 70% of normal. Mr. Edison was very pleased.

With kindest regard, remain

Very truly yours

William H. Kenemir

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols appears after the check (mark) of service, the message was transmitted by the symbol appearing after the check.

WESTERN UNION

TELEGRAM



NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols appears after the check (mark) of service, the message was transmitted by the symbol appearing after the check.

RECEIVED AT 238 MAIN ST.
1. 2NY GC 12 TRAILER HALL

FT MYERS FLO 406PM MAR 5 1918

WM H MEADOWCROFT

CARE EDISON LABORATORY ORANGE
MAIL SPECTROSCOPE TO MR EDISON BY FIRST CLASS MAIL LOUIE OTT
HAS IT

FRED OTT

614PM

Boston 363
TELEGRAPHIC CO. Jeff
BY JC AT 614PM

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
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If none of these three symbols appears after the check (mark) of service, the message was transmitted by the symbol appearing after the check.

RECEIVED AT
40NY H 43 NL

KEY WEST FLO MARCH 5-18
WM H MEADOWCROFT

THOS A EDISON LABORATORY ORANGE N.Y.
SHARK GOT OUR MODEL MAKE AND SHIP US SOON AS
POSSIBLE TWO COPPER MODELS SAME AS BEFORE LEAVE THE FINNS
OFF I WILL PUT THEM ON HERE MAKE CABLE HOLE ONE
QUARTER INCH SOUTHERN EXPRESS SHIP ONE SOON AS COMPLETE LET
OTHER FOLLOW.

S C SHAFFNER

1007AM MARCH 6

March 4, 1918.

Mr. H. Wells,
Concrete Engineer,
Department of Concrete Ship Construction,
United States Shipping Board,
Washington, D.C.

Dear Mr. Wells:

Replying to your favor of the 2d instant, let me say that I have no doubt whatever that Mr. Edison would be quite willing that you shall have sufficient of our material for making some tests whenever you are ready. Please let me have a few days notice when you want it, and say just how much you would like to have.

Yours very truly,

Assistant to Mr. Edison.

A/4781.

March 5, 1918.

Rear-Admiral W. Strother Smith, U.S.N.,
Navy Department,
Washington, D. C.

My dear Admiral:

I enclose Edison Laboratory bill,
in duplicate, for experimental work at cost from
December 5th, 1917 to January 31st, 1918, amounting
to \$16,242.54.

Yours very truly,

Assistant to Mr. Edison.

Enclosures - 2.

March 8, 1918.

Hon. Newton D. Baker,
The Secretary of War,
Washington, D. C.

My dear Sir:-

I enclose Edison Laboratory bill,
in duplicate, for experimental work at cost from
December 8, 1917 to January 31, 1918. \$1,944.62.

Yours very truly,

Assistant to Mr. Edison.

Enclosure - 2.

THE SECRETARY OF THE NAVY.
WASHINGTON.

5 March, 1918.

My dear Mr. Edison:

I have your letter explaining that you are experimenting on launching collision mats to save cargo boats after explosion of torpedo. I am looking forward with great interest to completion of these experiments.

Cordially yours,

Franklin D. Roosevelt

Thomas A. Edison, Esq.,
Naval Station,
Key West, Fla.

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON,
President.
PETER COOPER HENWITT,
Vice President.
WILLIAM L. SAUNDERS,
Chairman.
THOMAS RODINE,
Secretary.

OFFICE OF THE CHAIRMAN
11 BROADWAY, NEW YORK

Mar. 5, 1918.

Thomas A. Edison, Esq.,
U.S. Naval Station,
Key West, Fla.

Dear Mr. Edison:-

Thanking you for your memorandum of February 21, two great difficulties stand in the way of applying any outside plaster to a merchant ship, namely, reduction of speed and necessity for docking prior to its application.

The idea of using buoyancy boxes is free from these objections. People have turned down plans to make ships unsinkable because the Titanic went down and because there are numerous instances of ships sinking notwithstanding bulkhead constructions. In the first place, so far as the Titanic is concerned, it is generally understood that she went down because provision was not made for a double bottom, and in many other cases I think bulkheads did not save the ship because there were not enough of them or because the doors were not tight.

The Donnelly suggestion of buoyancy boxes seems to me to be simply making a bulkhead idea a practical one and applying it to normal ships.

Instead of depending upon a small number of large units this system depends upon a large number of small units.

If the hull of a vessel is honey-combed with air-tight cells it is obvious that the vessel cannot sink. This honey-combing will, however, take up too much cargo space, no doubt.

The Donnelly boxes are attached to the inner skin, bolted to the ribs and to the roof and other places in the bulkhead and decks.

In the case of the Lucia only 14 per cent. of her maximum carrying capacity was taken up. The exact percentage depends upon the nature and construction of each ship and the kind of cargo she carries.

We must not forget, however, that cargo carrying capacity is being destroyed every day by the sinking of ships and

Thomas A. Edison, Esq., -2.

cargo.

It has been estimated that during the month of January enough grain went to the bottom to make 360,000 barrels of flour.

It has been estimated that one ship was sunk carrying enough bacon to feed thirty thousand people.

It has been estimated that the economic loss by submarines during the year 1917 was between three and four billion dollars.

It has been estimated that about two million tons of food went down during the year 1917.

We have a limited number of ships. Until we build more those we have should be saved.

It does not solve the submarine menace to make ships unsinkable, but it might enable us to hold our own until the evil is destroyed, which, in my judgment, can never occur until either the nest is destroyed or the pathway bridged.

I trust that you are in good health and spirits and that I may have the pleasure of seeing you before very long.

Cordially yours,

W. J. Gandy

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HARRIS, JR.,
VICE PRESIDENT.
WILLIAM L. SAUNDERS,
TREASURER.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

MAR 5 1918

To the Members of the Naval Consulting Board,

Dear Sirs:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
MAR 16 1918 in the Carnegie Institution,
Washington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,
THOMAS ROBINS

Secretary.

By

gms

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

1/2 min. or longer. Use the symbol
of 1/2 min. after the check (number of
words) in the day message. Other
symbols are used in the night message.
Use the symbol preceding after the check.



NEWCOMB CARLTON, PRESIDENT - GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

Form 1201

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these symbols
represent the check (number of
words) in the day message, other
symbols are used in the night message.
Use the symbol preceding after the check.

RECEIVED AT 1288 MAIN ST.
ORANGE, N. J.
145NY GC 30

KEY WEST FL 131PM MAR 6 1918

WM H MEADOWCROFT

CARE T A EDISON ORANGE
PHONE DR JEWITT CHIEF ENGINEER WESTERN ELECTRIC COMPANY ASK HIM
IF THEY HAVE A NEW AND GOOD HEAD PHONE SET ADOPTED THROUGH OUR
AUDION IF SO MAIL TO COMPLETE SETS

S C SCHAFFNER

535PM

Boston 905
ELEPHONE NO. 905
TELEPHONED TO 905 PM
AT 905 PM

Secretarial Service Department
Office of Secretary

Zee

FUNCTION: Laboratory
SUBJECT: Expense Accounts
TO:

Memorandum No. 2601
Date March 6, 1918

Mr. W. H. Kehler,
C/o The Commandant,
U. S. Naval Station,
Key West, Florida.

Your letter of the 2nd has been received with various expense statements and checks are enclosed herewith.

As requested recently I wish in the future, if you find it will not annoy Mr. Edison to do so, that you would have him O. K. the expense accounts before coming to me. I have passed them into my files without this approval feeling sure that they were correct as rendered by you, but in case of an audit of the account it would be much better to have Mr. Edison's O. K. on each account. If Mr. Edison does not object to signing the accounts I should like to have the other boys secure his O. K. also.

I am sending you a check on the Private funds of Mr. Edison for \$7.15 to cover expenditures made for Mr. Edison's personal account. This account also you did not have O. K'd by Mr. Edison. I trust you will have similar accounts O. K'd by him in the future. You state that Mr. Edison has given you \$100.00 to expend for him for personal items. I assume, however, that the \$7.15 being remitted to you was not expended out of this fund. I assume, of course, that it was Mr. Edison's idea that you would account direct to him for any expenditures from this fund of \$100.00 for personal expenditures.

While neither yourself nor Mr. Wolf has O. K'd the bill from the Hotel Poughkeepsie, from the fact that you have sent it to me and referred to it in your letter I assume that it is correct and am sending them a check.

Your expense accounts do not show the shop orders which should be charged and we are charging the amounts to shop order 5699. If this is not correct please advise, and will you not in future kindly mark the number on the accounts. You are so far away from us that we can not keep in touch with the work you are doing and have to depend upon you for the proper distribution of the accounts.

With kindest regards, I am

R. W. KELLOW

Secretary

RWK/JL

Copies to:-

1588-3-50-1117

Calle Address "Edison, New York"

From the Laboratory
Thomas A. Edison,
Orange, N.J. March 7, 1916.

Mr. S. C. Shaffner,
c/o Commandant,
U. S. Naval Station,
Key West, Fla.

My dear Mr. Shaffner:

Let me thank you for your favor
of the 3d instant enclosing the bill from the Western
Electric Co., which you have O.K.'d. I will turn it
over to Mr. Kellow for payment if I find from Mr. Wold
that the price is right for the pair of head receivers.

Yesterday I received your telegram asking us
to make and ship as soon as possible two copper models
the same as before, and send one down to you by Southern
Express as soon as completed. There must be some
German sharks around your waters, and they are on to
your game. Perhaps you had better attach some hooks
to the next lot and put the fish-Boche out of business.

I regret very much, indeed, to learn that you
are having such a sorry experience in regard to the
persons you name. This is certainly very discouraging
and troublesome for you, but I have the greatest faith
in your ability to overcome these obstacles and to push
things to a successful completion in spite of them all.

I am glad to learn that all your material
has come to hand at last and shall hope to make your
list entirely complete by sending you the two copper
models at an early date.

With kind regards, I remain,

Sincerely yours,

O'Sullivan
Assistant to Mr. Edison.

(C)
March 7, 1916.

Mr. Arthur N. Cook,
K. D. K. House,
Hamilton, N.Y.

My dear Mr. Cooke:

Rephlying to your note, let me say that Mr. Edison is away from home and I do not expect him to return for at least two months. As to whether or not he will be able to utilize your services at the Laboratory this Summer is more than anyone can tell at this time. Just now he is away down South with all our experimentors and probably will not return for at least two months.

I would suggest that you write me again say the first or second week of May and see how matters stand then.

With kind regards, I remain,

Yours sincerely,

Assistant to Mr. Edison.

A/4792.

[ATTACHMENT/ENCLOSURE]

K. D. R. Home
Hamilton N.Y.

479²

My dear Mr. Meadowcroft:

This may
be a bit early but I
thought I would take this
opportunity to inquire about
work for this coming summer.
Will there be any chance for
me to come back to the
laboratory this coming
summer? College closes early
and I will be free by
June 1st or possibly May
20th. I tried to get into
the Aviation Corps but was
under weight and have
decided to wait for the

[ATTACHMENT/ENCLOSURE]

you familiarly. My address
is simply Hamilton.

Sincerely yours
Arthur N. Cook.

draft. I have been carrying
both Physics and Chemistry
this year and so would
probably be able to do more
than last summer. I have
a friend who would like
to work at the laboratory
if there was an opening.
He is also a scientific
student and is a good
concentrated worker. Could
you let me know soon
if there is a chance for
me to work at the laboratory
this summer.

I am sure that you
will remember me from
last year so I am taking
the liberty of addressing

PLEASE REPLY TO
SALES
DEPARTMENT

PATTON PAINT COMPANY

SOLE MAKERS
PATTON'S SUN-PROOF PAINTS
MADE IN U. S. A.
NEWARK, NEW JERSEY.

CABLE ADDRESS:
"SUNPROOF"

WESTERN UNION
CODES: LIEBERS
A.B.C. 4TH & 5TH ED.

March 8th 1918

Thomas A. Edison, Inc.,
West Orange, N. J.

Dear Sir:-

Under date of February 9th we received your telegram through Mr. Meadowcroft, asking for samples of the Fire Proof Paint we furnished you in the past for your Silver Lake plant to be sent to you, c/o of the Commandant, U. S. Naval Station, Key West, Florida.

We sent those samples on that date, and not having heard since that time, we are taking the liberty of asking if the samples were received, and if you had an opportunity to make tests of them at that time.

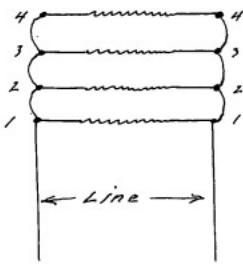
Appreciating your advices, we are,

Yours truly,

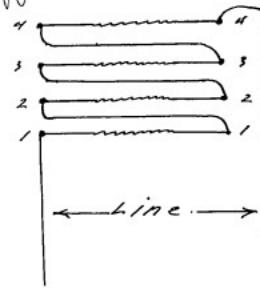
Ad Buckley
SALES MANAGER.

4829

~~Special~~ ~~your~~ Telephone Receiver Diagram
Shaffner



Coils in Parallel



Coil's in Series

Mr Edison
The 2 phones are going
by express today -
Meadowcroft
3/9/18

S. E. Langley
3-6-18

March 9, 1918.

Mr. W. H. Kniorim,
Key West, Fla.

My dear Mr. Kniorim:

I received your favor of the 4th instant, asking for a cylindrical mirror mounted on a piece of brass. We had to send a man to New York and have him hunt up the proper place where he had four of these mirrors made. I have had two mounted on brass and two I am sending separately. They are all going down to you by mail, Special Delivery, today. I am going to split them up in two packages, so as to avoid the loss of all, and hope you receive them in good condition promptly.

With kindest regards I remain,

Yours sincerely,

A/4815.

U. S. NAVAL STATION
KEY WEST, FLA.

Key West, Mar. 9 1918

Mr. R. W. Kellow
Edison Laboratories
Orange N. J.

My dear Mr. Kellow

Received your letter of Mar 6 - 1918 containing two expense checks. I will arrange in future to have Mr. Edison ok all expense accounts. With regard to job numbers can advise that all expenditures have been made on one account, i.e. expenses in connection with Mr. Edison's personal work on Naval matters. This account is the same as the one to which Mr. Meadowcroft charged expenses during our stay in Washington. I have not been informed of the number by which you recognize it but when needed will assume it is 5694 as mentioned in your letter of Mar 6, 1918. Kindly inform me if this is correct.

Enclosed is a statement of expenses made during Mar 9, 1918. Kindly omit customary check amount \$77.01

Very truly yours
William H. Kinney

4844

Zonarket Wash
March 9th. 1918.

2-

Mr Edison.

Iis. while going about my house-work today, I had an Idea come into my Head which I will explain here to you. Having read a lot about your wonderfull inventions. I could think of no one else who I could send to so well as you. I am just a poor working woman and a mother and I think it behoves the women as well as the men to try to do something to end this terrible war. or to help to try if my Idea is any good and you can use it in any way I shall be glad for you to do so. I do not

want any money for it, but if on the other hand you fail to see of any use what we could be made of it. then simply take no notice of this letter. My Idea is this. There is a wonderfull Inventor of Wireless Telegraphy. sending messages through the air without seeing or hearing. now why. Could there not be a machine invented that could be fixed to the four sides of a ship, or one in front by a ship with connecting wires running around the sides. that placed under water to a certain depth and another machine connected

3

above that would give warning
of any thing coming within
say a quarter or half a mile
further if possible. The
machine above to indicate the
direction it was coming in
by N. S. E. W., Compass. Then
the ship could probably
shoot dynamite into that
direction bringing the article
to the surface all allied
Submarines to send up a
certain code notice that they
were allied Submarines on sight
of the vessel firing this notice
for the vessel to dynamite
them. This machine to be
timed water placed where ever

it could get the best sounds
to photograph if possible, surely
there are some people with
brains that could invent
such a machine if I had
brains enough myself I think
I would try but I have no
capital even if I had the brains
trusting you can make use
of this idea I remain
Sincerely yours W. B. Jeffries

Shipped
Mar. 19, 18
U. S. NAVAL STATION
KEY WEST, FLORIDA

3/10 1918

Mr. Wm N. Meadowcroft
Orange
N.J.

My dear Mr. Meadowcroft
Please ~~the~~ express four
~~to~~ 1-gal bottles or cans of
Bengali - about 5-lbs of
Bees wax 1/2 pt & 1/2
brst sheet rubber 1/32 thick and
not less than 6" wide with this
rubber 1/2 pt of brst animal can-

game or Camout. I went to
make up some tubes 6" long
2" diameter

work seems to be
getting along fairly well
Mr Edison looks so much
better getting fat.

Albion

Armour & Co McWethie 4 1st room.

Manufacturers Bank 511 W. St. Harrison

B.F. Goodrich 22 new 1 sq yd 1 $\frac{1}{2}$ " rubber

Glendale

Lindbergh Building 292 West 1st or 9th Board

Minor Rubber Co 841 Board

Meadcroft ^{Received}
 3/14/18

3 / 11 / 1918

Joe Wissner who worked for us opportunity on
Phone & has him get ~~20~~ ~~coils~~
following things & send down here by
Express.

20 Edison Electric Condensers
12 Assorted induction coils
made by Burnell They are covered with
rubber the primaries & separated from
secondary - send the highest resistance
lowest resistance & 10 intermediate
Resistances of Secondary Coil &
the same as to primary coil - with
these I can make a high resistance
primary & low res secondary & vice versa
& other Combinations. I have about
40 of these coils made by Burnell
The Condensers are about 15" long
2 1/2" wide & 3/4" thick if you require
right, also I should like to have
2 lbs of No 36 double covered silk
wire so I can wind an induction coil
here also 2 lbs each of No 18 & 20
double cotton covered wire for
primaries,

Edison

March 11, 1918.

Patton Paint Company,
Newark, N.J.

Gentlemen: Attention Mr. A.A. Buckley:

Replying to your favor of the 8th instant, I beg to tell that I have heard from my West to the effect that the samples of fire proof paint that you sent down there have been given by Mr. Edison to one of the Officers of the Naval Station, who is now experimenting with the same. I believe they are also experimenting with it in the Aviation Section down there, and I would not be surprised if you presently will receive some orders for a supply.

Yours very truly,

Assistant to Mr. Edison.

A/4819.

20

March 11, 1918.

Mr. William Deans,
c/o Commandant,
U. S. Naval Station,
Key West, Fla.

Dear Mr. Deans:

I have received your favor of the
4th instant, and am glad to hear that you have
had an enjoyable trip down and have arrived at
Key West safely.

I have taken the matters you have written
about up with our Storage Battery people, and no
doubt by this time you have received several pamphlets
on the Edison Battery.

I have also ordered 100 pounds of Electrolite
to be sent down to you, and this will leave New York
tomorrow by way of the Mallory Line steamer for Key
West, and hope it arrives in good condition.

With kind regards, I remain,

You're very truly,

Assistant to Mr. Edison.

Key West Fla Mar - 18

Mr Wm H. Meadowcroft.

Orange N.J.

My dear Mr Meadowcroft

Please ask Dr

Jewell or Mr Gold to make us up
6 hand phones. We want these phones
to be used to generate the maximum
~~current~~ electrical energy from the vibration
of its diaphragm. What I have in mind is
two of them wound with the greatest number
of turns which would give 200 ohms.

2 of them wound with the greatest number
of turns to give 350 ohms and two to
give 500 ohms, and ask them to insulate
the coils and the terminals with oiled
linen in the place of red fibre. ask them
to rush the 6 phones. the hand phones you
sent I don't believe are the latest ones they
have turned out. Dr Pupin told me the W.E.C.
have recently developed a very fine phone that
is what I want if possible. Yours Shattoke

2NY H 88 NL

484⁸

KEY WEST FLO MARCH 13-18

WM H MEADOW C.R.O FT

CARE THOS A EDISON LAB ORANGE NJ

MAIL AT ONCE SIX FIVE HUNDRED OHMS BELL RECEIVERS ASK
THE WESTERN ELECTRIC CO TO USE VARNISHED LINEN IN
PLACE OF RED FIBRE.

S C SCHAFFNER

7AM MARCH 14

March 13th, 1918.

Mr. Thomas A. Edison,

Report on Order #5013:-

After determining the best arrangement of coils for the use of the amplifier under the condition that obtain with the Range Finder, we secured the necessary apparatus and equipped all three stations with amplifiers.

Introduction of the amplifier has greatly increased the difficulties of determining the exact starting point of the shot. Even comparatively light local noises are amplified to such an extent as to make a pronounced record and the vibrations of the horn by the force of the wind will produce a record difficult to distinguish from that of the shot.

The wind velocities have been exceptionally severe lately in fact, in some cases the towers which we considered securely anchored were blown over but we believe we have taken care of this by re-inforcing the towers mounting the transmitter in a sound insulated box close to the ground and conducting the sound from the horn to the transmitter by means of rubber tubing (garden hose).

When we have been able to get records that we could read satisfactorily we obtain as great a degree of accuracy as was reached without the amplifier and of course over a greater distance as indicated by the following three records we have just made.

SOURCE OF SOUND AT 15,900 FEET.

BASE LINE - 2400 Feet.

| SHOT NO. | NO. OF FEET. | PER CENT ERROR. |
|-----------|--------------|-----------------|
| #1 | 15,369 | minus 3.8% |
| 2 | 15,623 | " 1.7" |
| 3 | 16,668 | plus 4.9 |
| Average - | 15,893 | minus .1% |

The distance here of the source of sound was not specially surveyed by us but was very carefully located from Government survey.

With our saluting cannon at 15,900 feet from our observing station, the sound of the shot is just barely audible to the ear, and therefore any local noises such as a motor car passing on the road, a dog barking, or even the cawing of a crow near the horn may have a greater sound energy and make a deeper record than the sound we wish to observe.

It might be that we could select our sound to a sufficient extent so that it would be emphasized on the record by using both mechanical and electrical tuning. This however would probably be difficult to carry out on a practical scale.

As it is easier for the average person to recognize by ear a particular sound than it is to learn to recognize the main characteristics in a graphic outline of that sound it might be possible to combine some method of listening to the record on our reading machine. If the observer reading the record could listen to it and stop the machine instantly, he hears the sound he wants to read, he might by this means be able to locate it quite quickly under conditions where it would be almost impossible to be sure that the correct point was selected or where it would take a very much longer time to make the observation.

We are continuing our experiments at the "Range" using different horns and transmitter adjustments so as to eliminate the effect of local noises as much as possible.

EP

N. H. Holland.

NH

From
Commodore Gaunt, R.N.
British Naval Attaché,
681 - 5th Ave.,
N.Y.C.

COPY

Phone Plaza 9417

4847

13 March, 1918.

Dear Mr. Edison:

You will remember that you gave us photographs of a Double-Trumpet Sound-Locating Apparatus to forward to the Board of Invention and Research.

I enclose herewith photographs of two patterns of four-trumpet apparatus for locating aircraft in altitude and azimuth.

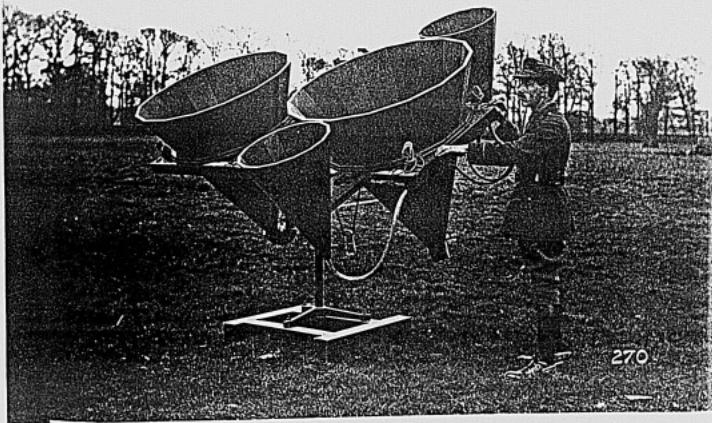
In one pattern the azimuth trumpets are 3' 6" in diameter at the mouth. In the other, all four trumpets are 1' 6" in diameter. It will be observed that sights are fitted to facilitate the direct control of searchlights by bringing the apparent end of the beam onto the foresight when aircraft are being followed acoustically.

I forward these photographs in the hope that they may be of interest to you.

Yours very sincerely,

(signed) Guy (L) Gaunt

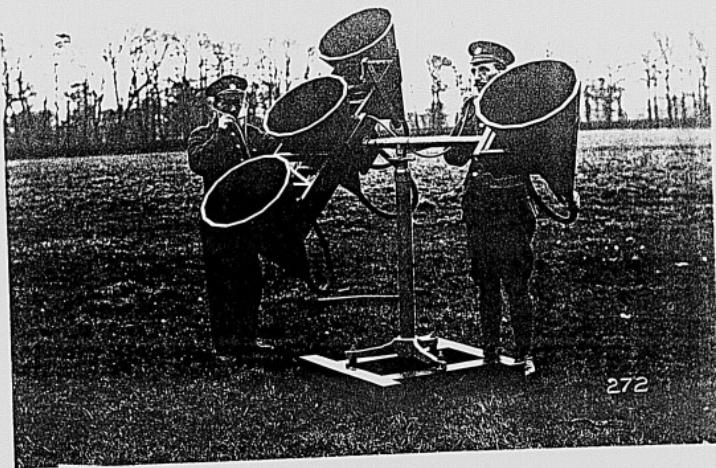
[ATTACHMENT/ENCLOSURE (PHOTOCOPY)]



[ATTACHMENT/ENCLOSURE (PHOTOCOPY)]



[ATTACHMENT/ENCLOSURE (PHOTOCOPY)]



272



March 14, 1918.

Mr. Edison:

Your memorandum about Condensers, coils and wire was received yesterday. I got Mellner on the job at once, and he got together the following material, which is being sent to you by express today.

The Bunnell coils are those that Geoghan made for you special last Spring. You will remember they were on the table back of your desk.

The Condensers have been gathered by Mellner from Building 4 and elsewhere.

COILS MADE BY BUNNELL:

| Secondary | Turns | Primary | Turns |
|-----------|-------|-----------|-------|
| 2810 ohms | 16050 | 15.8 ohms | 2160 |
| 2040 " | 11050 | 23.6 " | 2430 |
| 2025 " | 11050 | 2.1 " | 700 |
| 1360 " | 9350 | --- | --- |
| 1350 " | 9350 | 24.3 " | 2430 |
| 1070 " | 10110 | --- | --- |
| 755 " | 7050 | 2.9 " | 770 |
| 710 " | 7050 | 5.5 " | 1310 |
| 540 " | 6450 | 1.4 " | 610 |
| 280 " | 4530 | 4.6 " | 1150 |
| 205 " | 4150 | 4.7 " | 1150 |
| 202 " | 4150 | 2.9 " | 770 |
| 95 " | 3260 | 1.3 " | 610 |
| 95 " | 2260 | 1.6 " | 2160 |
| 53 " | 2160 | 6.5 " | 1310 |
| 51 " | 2160 | 2.1 " | 700 |

SMALLER SIZE COILS, AS FOLLOWS:

| | | | |
|-----------|-------|----------|------|
| 2800 ohms | 10650 | --- | ---- |
| 1000 " | 7850 | 260 Ohms | 8240 |
| 520 " | 5380 | 100 " | 4350 |
| 370 " | 3800 | 53 " | 3500 |
| 270 " | 4230 | ---- | ---- |
| 130 " | 3260 | 11 " | 1500 |

WESTERN ELECTRIC CONDENSERS:

| Pieces | Condensers | Capacity |
|--------|------------|-----------|
| 20 | 21 D | 2 M.F. |
| 4 | 21 E | 2 M.F. |
| 4 | 21 AA | 1 M.F. |
| 3 | 21 AH | 0202 M.F. |
| 2 | 21 F | 1 M.F. |

We are also sending the following spools on which
Meilner worked for you some time ago. We thought you could
perhaps use them:

3 finished hard rubber spools for primary.

3 half finished hard rubber spools for primary.

W.H.MEADOWCROFT.

W.H.M.

Call Address "Edison, New York"

*From the Laboratory
of
Thomas A. Edison,
Orange, N.J.*

March 14, 1918.

Mr. S. C. Shaffner,
c/o Commandant,
U.S. Naval Station,
Key West, Fla.

My dear Mr. Shaffner:

I received your letter of the 11th instant in regard to some hand 'phones that you wanted to have made up by the Western Electric Co. At the same time I have received your telegram of yesterday, and have sent you the following Day Letter today. This explains itself.

"Received your letter eleventh and telegram of thirteenth regarding Bell receivers. As I understand it, your telegram supersedes your letter, and you will not want the 200 and 350 ohm receivers. Have ordered six 500. Tell Mr. Edison his condensers, coils and wire go express today."

You will see the uncertainty that I feel about it, but possibly I may hear from you by telegraph before you receive this letter.

With kindest regards to you, I remain,

Yours very truly,

W.H. Meadowcroft
Assistant to Mr. Edison.

A/4848.

March 14, 1918.

Western Electric Co.,
463 West Street,
New York, N.Y.

Gentlemen: Attention: Dr. Jewett or Mr. Hold:

I hand you herewith copy of a letter that I have just received from Mr. S. C. Shaffner, who is working with Mr. Edison down in Key West. This letter calls for six hand 'phones, two of 250 ohms, two of 350 ohms, and two of 500 ohms.

Evidently, since the letter was written, Mr. Edison has changed his mind as to his requirements, as I have just received the enclosed telegram from Mr. Shaffner asking for six 500 ohm Bell Receivers. You will note that he asks you to use varnished linen in place of red fibre.

I am rather of the opinion that Mr. Shaffner's telegram supersedes his letter, but will find out by wire. At any rate, will you please go ahead and have the six 500 ohm Bell Receivers made up at once. If it is convenient to send them over by steamer when they are ready, please do so. If not, convenient to come to morrow, please phone me when they are ready and I will send a boy over for them and we will ship them from here.

Herewith I hand you Purchase Order for these six Bell Receivers, and would urge upon you immediate attention.

Yours very truly,

Assistant to Mr. Edison.

J

March 14, 1918.

Mrs. B. M. Jeffries,
Tumwater, Wash.

Dear Madam:

Your favor of the 9th instant to Mr. Edison has been received. He is out of town and will not return for two or three months, but in his absence we are able to inform you that there has been in operation for some time devices for detection of Submarines on somewhat similar lines to those suggested by you.

Yours very truly,
Edison Laboratory.

A/4844.

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols appears before the check, it means that words follow in a day message. Other words follow in a night message if the symbol appearing after the check is omitted.



NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols appears after the check, it means that words follow in a day message. Other words follow in a night message if the symbol appearing after the check is omitted.

RECEIVED AT

200 MAIN ST.
ORANGE, N. J.

202NY GC 42 BLUE ZEX

PN WASHINGTON DC MAR 14 1918 3PM

MR THOS A EDISON

ORANGE NJ

I HAVE A NEW STYLE MACHINE TO BE USED AT
 THE FRONT WAR DEPARTMENT VERY MUCH INTERESTED HAVE YOU A
 REPRESENTATIVE HERE I COULD SUBMIT PLANS AND SPECIFICATIONS TO WITH
 VIEW OF MANUFACTURING THEY WILL CARRY A LARGE GOVERNMENT CONTRACT

M" Bachman
 g will turn - I
 This over to you - I
 don't know this man - I
 look out, he may be
 trying to associate the
 Edison name with something
 that may o ^o HARRIS made
 be turned down HOTEL DRISCOL
 by the Dept. 1038PM
 3/19/18

F. D. JEWETT
CHIEF ENGINEER
J. L. MERRILL
ASSISTANT CHIEF ENGINEER
E. B. CRAFT
ASSISTANT CHIEF ENGINEER
E. H. GOLDETT
ASSISTANT CHIEF ENGINEER
W. F. HENDRY
ASSISTANT CHIEF ENGINEER

With kind regards
Rubber oiled Linen
over phone 474-1474
for you
Western Electric Company.
INCORPORATED
ENGINEERING DEPARTMENT
1603 WEST STREET
NEW YORK

MR. W. H. MEADOWCROFT,
Thomas A. Edison, Inc.,
Orange, New Jersey.

My dear Mr. Meadowcroft:

Since sending a brief note to you by your messenger I have taken up the matter of having the six hand receivers made, and we are starting on them immediately.

In all of our receivers the coils are wound separately and then mounted on the magnets, and at present we are using red fibre for the spool and the spool heads in all our work. We expect to be able, however, to use oiled linen as Mr. Edison desires, but it may require some experimentation before we obtain successful results, and this may delay the completion of the windings. We anticipate little trouble in substituting oiled linen for the spool itself, but obviously there may be some difficulty in displacing the red fibre spool heads, inasmuch as the linen will not act as a material mechanical support.

We are going to do the best we can, however, and hope to have these ready for you within a week, although in view of the necessity of some experimental work it may be two weeks before we get really successful results. In accordance with your request the spools will be wound for 500 ohms. When the receivers are completed they will be sent directly to you.

Yours truly,

R. J. Ward.

March 15, 1918.

REPLY REFERRED
P. I. Goldfarb
APPLYING TO

U. S. NAVAL STATION
KEY WEST, FLA.

Mar. 16, 1918

My dear Mr. Meadowcroft.

I have received the three pictures of Mr. Edison. Also the two packages containing the cylindrical mirrors. The latter were just what I wanted and I believe we can make good use of them.

In the March 9 issue of the Literary Digest there is an article on a diving shell for use against submarines. In this article reference is made to the Scientific American. If it is possible I would like to obtain a copy of this particular issue. No date is given.

There is a gentleman here who is employed in the Lighthouse Dept. a Mr. Lurey who has been of great assistance to us in furnishing docking facilities, office space and a machine shop. We would like to show our appreciation by presenting him with a picture of Mr. Edison. Will you kindly send one by return mail? With kindest regards to you, William H. Kinney

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HEWITT,
Vice-President.
WILLIAM L. SAUNDERS,
Chairman of the Board.
THOMAS ROBIN,
Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

March 16, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

At the meeting of the Naval Consulting Board held on March 16, 1918, it was on motion of Prof. Richards, seconded by Mr. Sprague, directed that the Secretary send the following proposed amendments to the Rules and Regulations of the Board to the members for their action at the next meeting, which is to be held on March 30, 1918:-

{ Extract from present Rules and Regulations, the words which
it is proposed to amend being underlined }

Article IV - Officers

1. The officers of the Board shall be:

Thomas A. Edison, President,
A Vice-President,
A Chairman of the Board,
A Secretary of the Board.

The three latter shall be elected annually by written ballot by the Board from among its members at its Annual Meeting, which shall take place in March. Due notice of such election shall be sent to each member of the Board at least ten days in advance of such Annual Meeting.

2. The terms of office of the Vice-President, Chairman and Secretary shall be for one year.

Article V - Meetings

1. Regular meetings of the Board shall be held at intervals of one month, excepting that there shall be no regular meetings during the months of July and August,

and special meetings shall be called by the Secretary of the Board, with at least five days notice, upon request of the Secretary of the Navy or the President or the Vice-President or the Chairman or any five members of the Board; the time, date and place of the meeting to be arranged by the Secretary of the Board in conference with those officers or members at whose request the Secretary called the meeting.

2. The Chairman shall preside at all meetings of the Board, and in the event of his absence, the Vice-President, if present; otherwise any member of the Board may be chosen as Chairman pro-tem by a majority of those present.

3. A quorum shall consist of ten members.

4. A member absent from a meeting may record a vote, aye or nay, by mail or telegram, but only for or against a resolution which shall have been referred to him by mail five days in advance of the meeting.

(Proposed amendments to the above)

Article IV, Sec. 1 Strike out the words "A Vice-President". Insert the words "A Vice-Chairman of the Board" after "A Chairman of the Board".

Sec. 2 Strike out the words "Vice-President". Insert the words "Vice-Chairman" after "Chairman".

Article V, Sec. 1 Strike out the words "Vice-President". Insert the words "or the Vice-Chairman" after "Chairman".

Sec. 2 Strike out the words "Vice-President" and insert in their place the words "Vice-Chairman".

The foregoing proposed amendments will be voted upon at the Annual Meeting of the Board to be held on March 30, 1918, in accordance with Article IX governing amendments, which is as follows:

Article IX - Amendments

No amendment to these Rules and Regulations shall be made except in accordance with the following procedure:

- (a) Amendments to these Rules and Regulations may be proposed at any regular meeting, and shall be voted upon at the next regular meeting of the Board.
- (b) The Secretary of the Board shall send to each member a copy of any proposed amendment at least two weeks prior to the meeting at which same is to be voted upon.
- (c) It shall require a favorable two-thirds vote of the entire membership of the Board, expressed either verbally or in writing, to adopt any amendment to these Rules and Regulations.
- (d) No amendment shall be effective until it shall have been approved by the Secretary of the Navy.

Attention is called to Article V, Sec. 4, and to Article IX, Sec. (c) with reference to voting by mail or telegram. It is hoped, however, that as many members as possible will attend the meeting.

Very truly yours,

Thomas Robins

Secretary

by G.C.T.

GT

ADDRESS ALL COMMUNICATIONS TO
UNITED STATES SHIPPING BOARD
WASHINGTON, D.C.

PLEASE REFER TO FILE
NO.

UNITED STATES SHIPPING BOARD
WASHINGTON

March 18, 1918.
No answer

Thomas A. Edison, Esq.,
Navy Annex,
Washington, D.C.

Dear Mr. Edison:

You will recall that sometime ago you suggested to me the idea of placing motive power in sailing vessels. Evidently that suggestion which was given some publicity has aroused the interest of Mr. William T. Cutter, whose letter to Senator Brandegee is herewith attached. I am sending you the correspondence for your information.

With kind regards, I am,

Sincerely yours,

Edward N. Hurley
Chairman.

ENH:FBL:G
Enclosure.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT;
PETER COOPER HOWEITT,
VICE PRESIDENT;
WILLIAM L. BAILEY,
CHIEF OF STAFF;
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

March 18, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The Annual Meeting of the Naval Consulting Board will be held on March 30, 1918, at the Carnegie Institution, Washington, D.-C. At this meeting, in accordance with the Regulations, the Board will hold its election of officers for the ensuing year.

Very truly yours,

Thomas Robins
Secretary
by G.T.

-
GT

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HEWITT,
Vice President.
WILLIAM L. SAUNDERS,
Chairman.
THOMAS ROBINS,
Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

March 18, 1918.

To the Members of the Naval Consulting Board:

Dear Sirs:

Please be advised that there was read at the Board meeting held on March 16, 1918, a letter written by Dr. Peter Cooper Hewitt to the Secretary of the Navy resigning membership from the Naval Consulting Board, and a reply from the Secretary accepting the resignation. Dr. Hewitt being no longer a member of the Board, all lists should be corrected accordingly.

Very truly yours,

Thomas Robins,
Secretary,
by G.T.

GT

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HEWITT,
VICE PRESIDENT.
WILLIAM L. SAUNDERS,
CHAIRMAN.
THOMAS ROBIN,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

March 18, 1918.

To the Members of the Naval Consulting Board:-

Dear Sir:

I enclose herewith a list of the members of
the Board giving business addresses, residences and
telephone numbers.

I am compiling a new list and should be
very much obliged to you if you let me know promptly
what changes, if any, should be made. I should
also be obliged to you for any information which you
wish incorporated.

Very truly yours,

THOMAS ROBINS,

Secretary,

By *gus*

GUS

[ATTACHMENT/ENCLOSURE]

NAVAL CONSULTING BOARD

OFFICERS

President, Thomas A. Edison; Chairman, W. L. Saunders; Secretary,
Thomas Robins

MEMBERS

ADDICKS, LAWRENCE, 126 Liberty St., N. Y. City, Tel. Rector 3330,
Res., 3 Beechwood Pl., Elizabeth, N. J., Tel. Elizabeth 32 ~~44~~
ARFOLD, COL. BISHOP J., 105 South LaSalle St., Chicago, Ill.
BAEHELMER, DR. L. H., Harmony Park, Yonkers, N.Y., Tel. Yonkers 3436,
N.Y. Office General Bakelite Co., 100 William St.,
Tel. John 1640.

COFFIN, HOWARD E., Aircraft Production Board, Washington, D. C.
GRAVEN, ALFRED, 375 Park Ave., Yonkers, N.Y., Tel. Yonkers 1444.
EDISON, THOMAS A., Laboratory, W. Orange, N.J., Tel. Orange 907.
EINET, W. L. R., General Electric Co., Schenectady, N.Y.
HUIT, A. H., U. S. Shipping Board, Interstate Bldg., Washington, D.C.
55 Liberty St., N.Y. City, Tel. Cortland 4388, Res., Bor-
deaux Apartments, 548 Riverside Drive, N.Y., Tel. Morningside
4880.

HUTCHISON, DR. H. R., Edison Laboratory, W. Orange, N.J., Tel. Orange
907, Res., Llewellyn Park, N. Orange, N.J., Tel. Orange 4716
LAWIE, B. G., Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.,
Tel. Hilland 1522 (Bell telephone).

MEXIM, MURRAY, Main Park, Landing, N.J., Tel. Moratcong 33,
350 W. Banks Ave., Brooklyn, N.Y., Tel. Bedford 2515.

MILLER, SPRINGER, 15 Liberty St., N.Y. City, Tel. Rector 3110,
Res., 217 Tyrrell Ave., So. Orange, N.J., Tel. S. Orange
771.

RICHARDS, PROF. JOSEPH W., Lehigh University, South Bethlehem, Pa.
TIFER, ANDREW L., Locomobile Co. of America, Bridgeport, Conn.,
Res., Fairfield, Conn.

ROBINS, THOMAS, 15 Park Row, N.Y. City, Tel. ~~Cortland~~ 2860, Res.,
144 East 56th St., N.Y., Tel. Plaza 2446, (Summer) Shippen
Pt., Stamford, Conn., Tel. Stamford 158.

SAUNDERS, W. L., 11 Broadway, N.Y. City, Tel. Bowline Green 3434,
Res., 4 West 40th St., N.Y. City, Tel. Vanderbilt 2227.

SELLERS, H. B., 801 N. Arlington Ave., Baltimore, Md.

SHERRY, EMERSON A., 40 Flatbush Ave., Ext., Brooklyn, N.Y., Tel. Main
6700, Res., 1505 Albemarle Rd., B'ly., N.Y. Tel. Lubinburgh 54
SPRAGUE, FRANK J., 165 Broadway, N.Y. City, Tel. Cortland 3303,
Res., 241 West End Ave., N.Y. City, Tel. Columbus 2303.

THAYER, B. E., 48 Broadway, N.Y. City, Tel. Broad 1438,
Res., 46 E. 79th St., N.Y. City, Tel. Lenox 7506.

WEBSTER, DR. A. G., Clark University, Worcester, Mass.

WHITELEY, DR. W. R., General Electric Co., Schenectady, N.Y.

WOODWARD, DR. R. S., Carnegie Inst. of Washington, Washington, D.C.

DETAILED TO NAVAL CONSULTING BOARD

SUTT, REAR ADMIRAL W. STROTHER, Navy Department, Washington, D.C.
JENKINS, MAJOR R. D., 80 Linden Lane, N.Y. City, Tel. John 6146.
WHITFIELD, MAJOR J. B., Johns Hopkins University, Baltimore, Md.

No.

United States Navy Yard,
NEW YORK, N. Y.

March 19, 1918.

My dear Mr. Edison:

I have delayed answering your letter in regard to the hydrogen detector in the hope that I would receive a report of tests from the Bureau of Standards to whom I forwarded a Burrell instrument for test quite a while ago. When I get this report I will send you a copy.

The gas detector which we are manufacturing and issuing was developed by the Bureau of Standards. Repeated tests made at this yard with mixtures of known hydrogen content indicate that these detectors are accurate to about 1/4 of 1%, which I think is sufficiently accurate for our purposes as we are not certain within these limits as to when the mixture reaches the danger point.

Our tests on Burrell tubes have indicated their accuracy to about 1/2 of 1% but I am awaiting a report from the Bureau of Standards on the accuracy of these tubes which we used as a check on our automatic detectors. They are rugged and portable.

The Sperry type has not been accepted due to inaccuracy as found on our tests.

The instrument submitted by you was found to be very accurate on our tests and its great accuracy makes it valuable as a laboratory standard, but I think it is doubtful if the average enlisted man could operate successfully this instrument on a submarine.

Mr. Meadowcroft is mistaken in supposing that I left all this to subordinates as I was in touch with the main features of the different instruments tested..

As you know, the men on submarines may possibly be careless or neglectful in taking readings with an instrument that requires a special operation for the purpose, while with one that is continuous reading they would be more apt to know the percentage of gas in their boat, and if in addition to having the continuous reading, there is

a bell that rings when the assumed danger point is reached, I think the people on the boat have been provided with means to prevent explosion so far as that is possible.

The conditions may be compared to a steam boiler under pressure, - if the firemen were expected to attach an instrument and go through an operation to find out the boiler pressure at any time and no safety valve provided, I should expect explosions to be common; but as there is provided a continuous reading pressure gauge so that the pressure may be read at a glance, and in addition a safety valve that will blow when the danger point is reached, we have done all that is possible. In the same way the continuous reading hydrogen detector and the alarm bell sounding at the danger point seems to afford all possible protection and these features appear to me to outweigh in desirability the superior accuracy of the detector which you sent in.

I have been so busy with the large number of ships that I have to fit out and repair that I have not had much time to go very far into details on most matters but I made a special effort to consider this as I know that you were greatly interested.

I hope that you are in good health and am sorry that I cannot see you occasionally. I can never get out of the yard these days but it seems that the harder I work the better I feel.

With regards and best wishes,

Sincerely yours,



P.S. Your enclosures
returned herewith.

Hon. Thomas A. Edison,
Navy Department Annex,
Washington, D. C.

Jell Board We had no trouble
in adding a dial to ours ~~one~~ ^{the}
but I left it out. I have one
in a submarine which operates every
other day, to test it as Bureau ^{one} over

at Washington turned it down on
account of being fragile, it was
in a month - not broken although
fastened to wall. Edge has
Health is good & West Prince be-
comes in Henry to see him.

Edgar

Telephone

March 20, 1918

Thomas A. Edison

c/o Commandant

U. S. Naval Station

Key West, Fla.

Louis Ott says gas formula
no good. Tried it on mouse.

None of us

3/20/18

sent W.U. 35 pm. W.H.W.

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON, CHAIRMAN.
PETER COOPER HEWITT, VICE PRESIDENT.
WILLIAM L. SAYRE, SECRETARY.
THOMAS HOBSON, SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

March 21, 1918.

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, N. J.

My dear Mr. Edison:

At the last meeting of the Board on March 16th it was agreed that each member who was so disposed should individually express to the Secretary of the Navy his views as to the need for a great number of additional large, seaworthy and fast submarine chasers. Some of our members have already written or telegraphed to the Secretary advocating the immediate construction of 250 of such boats. It seems important that as much pressure as possible should be brought to bear on the Navy Department, and with the thought that you may find in it some information which you might make use of in writing or telegraphing to the Secretary, I am sending enclosed a copy of a letter which I wrote him under date of March 18th, also a copy of a Tribune editorial on the same subject.

Yours very truly,

TR/gt
Enc.

Best wishes



REPRESENTATIVE IN CUBA
OF THE
FOOD & FUEL ADMINISTRATIONS,
WAR TRADE & SHIPPING BOARDS
OF THE
UNITED STATES.

500 ROBINS BUILDING,
HABANA, CUBA.

IN REPLY REFER TO
FILE NO. 25

March 21, 1918.

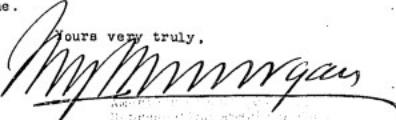
Charles B. Hanford, Esquire,
U. S. Naval Station,
Key West, Florida.

My dear Mr. Hanford:

I have to acknowledge receipt of your letter of March 21, 1918, addressed to me at Mr. Edison's direction, with reference to the vessels bringing lumber and other commodities to Cuba and returning light to the United States.

You may rest assured that I shall do everything in my power to have this tonnage diverted to the carrying of sugar in order to relieve the threatened congestion at some of the Cuban ports, and I am glad that you have referred inquiring ship owners to me.

Yours very truly,



J. P. MORGAN, JR.
Chairman of the Board
of Directors of the Morgan
Trust Company, New York City

ECH/

OFFICE OF FIRST VICE-PRESIDENT AND GENERAL MANAGER

MEMORANDUM NO. _____

FUNCTION

March 23rd, 1918

SUBJECT

Meadowcroft

Dear Mr. Meadowcroft:

In reference to the attached telegram from Mr. J. O. Mack, Hotel Driscoll, Washington, D.C., wish to state I stopped in to see Mr. Mack and found that he had a half completed set of drawings and specifications of a proposed trench digger.

That he is particularly interested in is to have somebody influence the Department in his scheme. I told him we had enough schemes here to bust the bank of England and we would not be interested in anything of that nature.

He is a young fellow from Idaho, not very impressive and not overly intelligent. He has spent almost \$1000. in development work but nothing to show but a muddled up set of drawings.

Rufus A Bachman

R.A.BACHMAN

*Noted
W.M.*



MANCHESTER, CONN., U.S.A. March 23, 1916.

Thomas Edison,

Orange N. J.

Dear Sir:-

Answering your letter of the 9th relative to type "H" instruments that have been sent here to the factory to be re-altered advise that these will be forwarded to you on Monday the 25th.

Yours very truly,

The NORTON ELECTRICAL INSTRUMENT COMPANY.

HMN.G.

Treas.

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT

WASHINGTON

VR/WSS/26840

March 25, 1918.

You can give
him a list
of names
of Edison's
etc G

Dear Mr. Meadowcroft:

I received an inquiry this afternoon from the Office of Naval Intelligence as to a chemist named Silver. As I have frequent inquiries as to who is connected or working with the Naval Consulting Board do you not think it advisable to furnish me with a list of the names of those working in connection with or under Mr. Edison?

Hoping everything is going well with you and if correspondence with Mr. Edison is not going satisfactory please inform me personally.

In locating the quarters in the new building to be erected for the Navy Department I see they have included a room for Mr. Edison adjacent to the General Board. I had already provided for him in the Naval Consulting Board quarters and I feel sure that he would have more privacy and more room to spread out in case of necessity in the quarters assigned to me than he would with the General Board and at the same time be close enough to the General Board and all other offices to get full information. He could then use any of my office force, his mail could be brought by my messenger and I think he could probably receive more personal attention.

Will you take this up with him or shall I?

Another inquiry has come
in regard to Silver.
Can you locate him.

Sincerely yours,

Wm. H. Meadowcroft

Mr. Wm. H. Meadowcroft,
Edison Laboratory,
Orange, N. J.

4977

H 85

Mr. Edison
my reply attached
Meadowcroft

[ATTACHMENT/ENCLOSURE]

March 28, 1918.

Rear-Admiral W. Strother Smith, U.S.N.,
Navy Department,
Washington, D. C.

My dear Admiral:

Pardon the delay in replying to your letter of the 26th instant. I have been struggling in the waters of affliction recently, having lost my wife and her mother within a few days of each other, and in consequence, have been suffering from a nervous collapse which has kept me from the office several days.

Mr. Bruce E. Silver is a Chemist, who has been working with Mr. Edison on the Government experiments over since last Spring. He is now down with Mr. Edison at the U. S. Naval Station at Key West.

I do not think that Mr. Edison would have any objection to my furnishing you with a list of the names of the experimenters who are working in connection with or under him, and I will write down and ask him to give me permission to furnish you such a list.

In regard to quarters for Mr. Edison, I think it might be well for you to take the matter up with him direct, as it will cut out some circumlocution. My impression is that before he left Washington, in February, he had made some arrangements with the Secretary about quarters, and Secretary Daniels had given instructions to Mr. J. J. Butler of the General Board in connection therewith. As Mr. Butler is so near you, perhaps it might be well for you to have a little talk with him about the matter and see if my impressions are correct.

With kind regards, I remain,

Sincerely yours,

Assistant to Mr. Edison.

A/4880.

WESTERN UNION

TELEGRAM

GEORGE W. E. ATKINS, VICE-PRESIDENT NEWCOMB CARLTON, PRESIDENT BELVIDERE BROOKS, VICE-PRESIDENT

| | | |
|----------------|------------|-------|
| RECEIVER'S No. | TIME FILED | CHECK |
|----------------|------------|-------|

4:30 P.M.

Raa

SEND the following Telegram, subject to the terms
on back hereof, which are hereby agreed to:
Thomas A. Edison,
To Key West, Fla.

March 26, 1918. 191

Am sending red and sheets. Western Electric
making up receivers ordered sometime ago insulated with oiled
linen. They will try to insulate with hard rubber as you
suggest. At Conference with their men they say audion will
have to be rearranged to get best results. I am making up
here what I consider two very fine instruments complete and
will be able to send it out Saturday. Cable is promised for
last of the week. Pushing it all fast as possible. Will
be here until Saturday if I can do anything please wire me here.

Shaffner.

SENDER'S ADDRESS
FOR ANSWER

SENDER'S TELE-
PHONE NUMBER

Form 104

| CLASS OF SERVICE | SYMBOL |
|-------------------------|--------|
| Day Message | |
| Day Letter ¹ | Blue |
| Night Message | None |
| Night Letter | N.L. |

If more than three symbols appear after the check (number of symbols having no significance), they will be repeated in the same sequence appearing after the check.

WESTERN UNION
TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | None |

1 If more than three symbols appear after the check (number of symbols having no significance), they will be repeated in the same sequence appearing after the check.

RECEIVED AT
7 NYR 48 NNL

KEYWEST FLO MAR 27 1918

S C HAFFNER

CARE W H MEADOWCROFT EDISON INC ORANGE NJ.
TWO SINGLE CABLES TWISTED TOGETHER ACTS BEST, A SINGLE STRAND
BREAKS AT THREE HUNDRED POUNDS HAS TWICE STRENGTH NECESSARY, HAVE
FOUR THOUSAND FEET SINGLE CABLE MADE WITH COPPER AND STEEL
WIRES HALF THE WEIGHT BUT KEEP RUBBER SAME THICKNESS BRAID
AND WAX WE WILL TWIST CABLES HERE ANSWER

I A CARLTON

725AM MAR 28

Bishop Gutta Purusha ^C

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

(If name is checked, enter initials or symbols after the check (number of words) and then the symbol indicating the control encoding after the check.)

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT / GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

(If name is checked, enter initials or symbols after the check (number of words) and then the symbol indicating the control encoding after the check.)

RECEIVED AT 800 MAIN ST.

B NYR 27 NLNL

KEY WEST FLO MAR 27 1918

W H MEADOWCROFT

ORANGE NJ

SEND BY MALLORY LINE FIRST STEAMER THREE HUNDRED AND FIFTY
YARDS OF COW HAIR FELTING ONE INCH THICK LIKE USED
IN BOOTH AND STEEL RECORDING LABORATORY ANSWER

T A EDISON

7 26AM MAR 28

Simmons Pipe Bending Co. Inc.

W. W. I - EXP. WORK

U. S. NAVAL STATION
KEY WEST, FLA. March 27, 1918.

Dr. M. R. Hutchison =

Edwin Laboratories,

Orange N. J.



My dear Doctor Hutchison = Indeed please find a note which
Mr. Zelina has just handed me, over at the dock, to send to you -
on receiving your letter in today's mail. Thank you for your
at first he said wire it and then said send by mail.

With best wishes & love,

Sincerely yours,

Charles D. Mayfield

Hulcheson

Mar 27 1918

With Harris Sachem
will be sufficient and Reposo
not necessary I will not come
north until April 20th —
Eduard

1

Telegram

March 28, 1918

Thomas A. Edison
c/o Commandant
U. S. Naval Station
Key West, Fla.

Will ship cow hair felting
next Tuesday Mallory boat. Do
you want three hundred fifty
square or linear yards -
answer quick.

Meadowcroft

3/28/18
W. H. 8 AM
245 Wm

Faces 104

WESTERN UNION

TELEGRAM.

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|---|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |
| If none of these three symbols appears after the check character of address or subject, (name of town or city) will be character indicated by the symbol appearing after the check. | |

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols appears after the check character of address or subject, (name of town or city) will be character indicated by the symbol appearing after the check.

RECEIVED AT 268 MAIN ST.
 ORANGE, N. J.
 SNY H 40 NL

KEY WEST FLO MARCH 28-18
 W H MEADOWCROFT

ORANGE NJ

MR EDISON OUT ALL DAY JUST RETURNED SAYS THREE HUNDRED
 AND FIFTY SQUARE YARDS BEST RESULTS TODAY ON FISH YET
 ACCOMPLISHED THINK THEY ARE ON RIGHT TRACK NOW ALL PLEASED
 ALL WELL AND HAPPY EXPECT MRS EDISON HERE MONDAY NIGHT.

CHARLES B HANFORD

738AM MARCH 29

| | |
|--------------------------|------------------|
| CLASS OF SERVICE | |
| <input type="checkbox"/> | Fast Day Message |
| <input type="checkbox"/> | Day Letter |
| <input type="checkbox"/> | Night Message |
| <input type="checkbox"/> | Night Letter |

If no class of service is indicated the telegram will be transmitted as a fast day message.

COPY OF
WESTERN UNION TELEGRAM

CONFIRMATION

Orange, New Jersey.
March 28th 1918.

Thos.A.Edison,
Naval Station, Key West, Florida.

Understand you expect be here April fifteenth if so unless you want me there now I will await your return and not go South Saturday. Please telegraph me immediately what I shall do.

HUTCHISON.

| | | |
|--|---|----------------------------|
| CLASS OF SERVICE | SYMBOL | U.W.I.-EXP. WORK Form 1204 |
| Day Message | None | |
| Night Message | None | |
| Night Letter | N.L. | |
| If none of these three symbols apply, check here _____ | | |
| WESTERN UNION TELEGRAM | | WESTERN UNION TELEGRAM |
| NEWCOMB CARLTON, PRESIDENT | GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT | |

RECEIVED AT. 208 MAIN ST.
BNY H 49 NL ORANGE, N. J.

KEY WEST FLO MARCH 28-18

MR HUTCHISON

EDISON ORANGE NJ

MR EDISON OUT ALL DAY RETURNED SEVEN TONIGHT SAYS WILL
NOT BE NECESSARY FOR YOU TO COME HERE MAILED YOU
IMPORTANT LETTER FROM HERE YESTERDAY SUBJECT YOUR LAST LETTER HE
APPROVED OF YOUR SUGGESTION REGARDING PARTIES IN COMMAND APRIL TWENTY
SEVEN FOR RETURN ALL WELL MAKING GOOD PROGRESS NOW.

CHARLES B HANFORD

735AM MARCH 29



| | | | |
|---|---|---------------------------------|------------|
| WESTERN UNION TELEGRAM | | | Form 102 |
| GEORGE W. E. ATKINS, VICE-PRESIDENT | NEWCOMB CARLTON, PRESIDENT | HELVIDENE BROOKS VICE-PRESIDENT | |
| RECEIVER'S No. | TIME FILED | CHECK | Han to Mc. |
| SEND the following Telegram, subject to the terms on back hereof, which are hereby agreed to | | March 28, 1918. 191 | |
| To | Thos. A. Edison, c/o Commandant, Naval Station, Key West, Fla. | | |
| Telegram received. Am taking up cable specifications you mention with Bishop. As a reminder will say you have there about two thousand feet of twisted pair Navy field wire, in good condition | | | |
| S.C. Sheffner | | | |
| SENDER'S ADDRESS FOR ANSWER | SENDER'S TELE- PHONE NUMBER | | |

March 29th, 1918.

Mr. Thomas A. Edison,
Key West, Florida.

My dear Mr. Edison:-

On arriving here last week I at once went to Mr. Langley and asked for his assistance to familiarize him with the whole situation. He accompanied me to the Bishop Gutta Pescha Company and went over the situation with Mr. Reid, the Manager and Vice President of the firm.

They had about half made 2 pieces of concentric cable, each piece 2,000 ft. in length, the outer conductor is of copper in place of steel as in the former cable. The outer covering is of a very high quality and will be the best for the work. This will add to the flexibility of the cable and will not break if properly protected at the weak point. This cable he expects to ship the first of the week. He is also making up 200 Ft. of very flexible cable which you desired. It is made up with 19 strands of #32 steel, with concentric winding with copper highly insulated and to be over 1.8 inch in diameter.

In reply to your telegram which is as follows:-

"Two single cables twisted together acts best, a single strand breaks at three hundred pounds, has twice strength necessary, have four thousand feet single cable made with copper and steel wires half the weight, but keep rubber same thickness braid and wax we will twist cables here."

will say Mr. Reid has finally found material to make a cable which he believes to be ideal for your work. He found some "Airoplane strand." This strand is of 7 #28 B & S very high grade steel with tensil strength of 185 lbs. each strand. When this cable is completed it will be about the same diameter as the cable you are now using.

We hope that this will be satisfactory.

Mr. Langley and myself have designed what we consider a very well insulated "magnetophone" and two of them are being made up. Expect to ship them about next week. It is a hand phone made over and enclosed in hard rubber and I believe it would be impossible for the insulation to break down

Mr. T. A. Edison -2-

providing there is great care used in assembling it. Drawings will be forwarded to you the first of the week. He is also making up a telephone of the hand phone type which is said to be a little more efficient and will be practically impossible to break the insulation down on it if ordinary care is used in handling it. It is very difficult to get in the open market hard rubber with high insulating properties. It is usually made from scraps which contain metal and all kinds of conducting material. We find that to get rubber suitable for the high class of this work, it will be necessary to have the rubber made up especially for that purpose.

Mr. Langley is going to push this right along and will send them down just as soon as possible. We will not assemble them entirely because we think it best for some careful man to assemble them there, than he will understand the mechanism and how to handle them. I want to caution you that great care must be used to get results with these 2 instruments using carefully applied the black cable wax you have there on all of the threads and joints that you expect to take apart and the black armature varnish in sealing up around the diaphragm. Mr. Langley thinks that the clear varnish we are sending you will answer better than the ordinary black varnish we got from the Street Railway Company when I was there.

We had the magnets on these 2 types of instruments re-wound so that they will be about what is necessary for the primary winding in the audion transformer, that is, the reactance is fairly well balanced with the audion.

I am leaving here tomorrow for my home, 6107 Kimbark Avenue, Chicago, Illinois and I sincerely trust that everything will be worked out to your entire satisfaction and at an early date.

Very respectfully,

Signed C. S. Shaffner.

COPY.

MEDICAL RESEARCH BOARD
AVIATION SECTION
SIGNAL CORPS

March 20,

8

From: The Secretary, Medical Research Board
To: The Thomas A. Edison Laboratory
Subject: Charges on Control Boxes

1. In connection with your statement of February 26th, some explanation is desired of your charges "overhead, 50% on machine labor and 25% on supervision, total \$535.48." This seems to be rather an extraordinary item for construction work in which the machine labor alone amounted to the sum of \$875.08, and supervision and drafting \$318.60, a total of \$1194.68, which total would seem to be amply sufficient for the work produced.

2. In this connection, it is desired that in your reply you include a copy of the letter of Dr. Yandell Henderson, authorizing you to do this work. The following quotation from the minutes of the Medical Research Board bears on the above statement:

"In a free discussion of the bill by the Board, it was agreed that the charges were exceedingly exorbitant."

H.G.Seibert

Major, M.R.C.

March 30, 1916.

Rear-Admiral G. E. Burd, U.S.N.,
Navy Yard,
Brooklyn, N.Y.

My dear Admiral Burd:

Mr. Edison has sent to me your letter to him of the 19th instant, in connection with the Hydrogen Detector, together with the correspondence and papers relating thereto.

He wishes me to tell you that he had no trouble in adding a dial to our form of Detector, but he purposely left it out in the one that was sent to you.

He also says that he has one of the Detectors in a Submarine which operates every other day. He placed it there to test it, as the Bureau at Washington turned it down on account of its being "fragile". It has been in position a month and is not yet broken, although it is fastened to the hull.

Mr. Edison also expresses the hope that your health is good, and says that he will be over in May to see you.

Yours very truly,

Assistant to Mr. Edison.

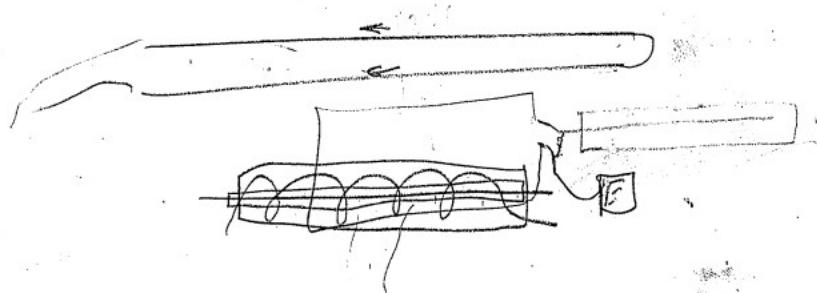
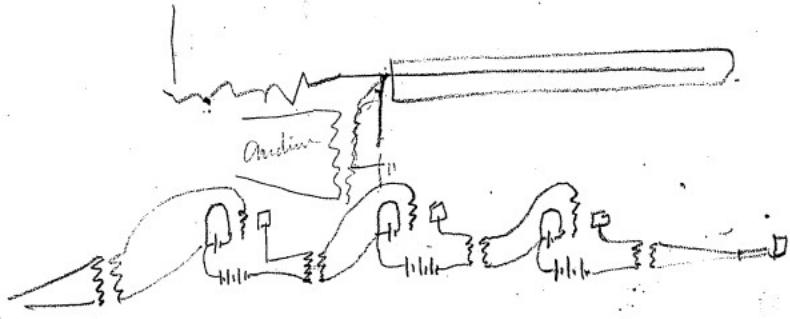
P.S. I feel a little embarrassed to see that Mr. Edison sent you Mr. Werner's memorandum with my rather free and easy comments written upon it.

W.H.M.

Huffman

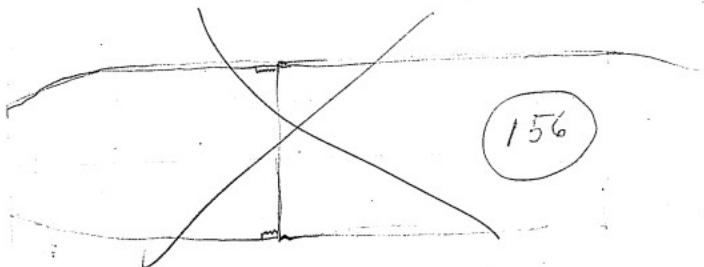
Why not use the ribbon
microphone it worked on
Microphones its perfectly
stable in weather & is
recorded very easily
Especially when have a
lot of delay &
improving something
that is OK

Edison





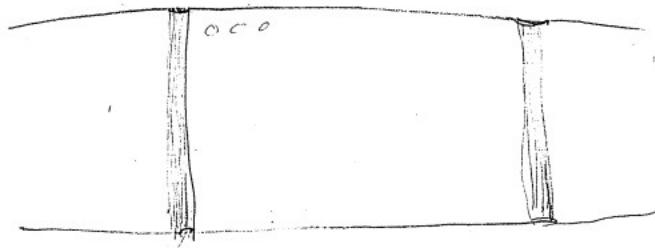
N° 1



fun cone-

Cured on form + then peet on model

Paint garage up
lower house Vulcanized
150 Z



Cut away $\frac{1}{4}$ inch
natural thickness of the rubber
+ the thickness of no 26 @ 30 B.C.G.
copper -

then smooth over with dope

form on block $\frac{1}{2}$ smaller Cement

+ Cure or Vulcanize on block
use Talcum powder to prevent
sticking

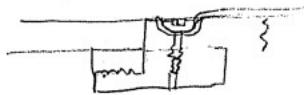
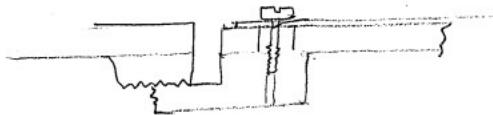
No 3



Ring

Can put new rings on
boat.

NO 4



**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
April 1918**

10 AM
Sent by 2:50 PM
4/1/18. (W.M.)

Day Letter

April 1, 1918

Thomas A. Edison

Key West

Tomorrow Tuesday evening
a war Committee of 200 from entire
Edison interests, Chas Edison, Chairman,
will hold their first meeting. All
war measures such as food, liberty
loans, war saving stamps and other
matters requiring our cooperation
with Govt. will be discussed and
Committees organized of representative
men and women selected from
workers. The slogan will be
make a business of winning the
War. Keenly telegraph a good message
to be read at this first meeting. Meantworth

110-181
Telegraph April 1, 1918

J. J. Butler, Navy Dept.
Navy Annex
Washington, D. C.

Mr. Edison wants a small
motor about 6 volts 6 amperes
~~3900~~ ^{quickly} & about 4000 revolutions
a minute. frame diameter ~~W~~ about
4 inches, length about 6 inches.
Ball bearings. He has heard that
Signal service people have developed some
small machines of this kind. Will
you kindly stop over and
see Captain Gray 1212 G St
and see if they have
so one, whether ^{and} they can spare for Mr. Edison
for his experiments so please send it to me
at laboratory for certain modifications
wanted by Mr. E. - Wt measurements

Form 202

WESTERN UNION

TELEGRAM

GEORGE W. E. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

DELVIDERE BROOKS, VICE-PRESIDENT

| | | |
|----------------|------------|-------|
| RECEIVER'S No. | TIME FILED | CHECK |
|----------------|------------|-------|

SEND the following Telegram, subject to the terms GC 73 Govt
on back hereof, which are hereby agreed to
WA Washington DC 450PM Apr 1, 1918.

W. H. Meadowcroft,
Edison Laboratory, Orange, NJ

Captain Gray of Signal Corps has no motor
of type requested. His Material has been transferred to Signal
Corps Laboratory at Little Silver NJ. He suggests you telephone
to Captain down there. They might have a small dynamo which
could be modified and adapted. I am telephoning to Frank Conrad
Westinghouse Company at East Pittsburgh. Will communicate with
you tomorrow.

Jarvis Butler

-copy-

A

April 1, 1918.

Mr. J. O. H. Pitney, Chairman,
U. S. War Department,
District Board for Division No. 2 of New Jersey,
752 Broad Street,
Newark, N.J.

Dear Sir:-

Your notice regarding Industrial Claims,
in regard to John Hanley of Local Board No. 4, Newark,
has been received.

I have prepared an affidavit, which is
enclosed herewith. You will see from this affidavit
that it is not quite possible to prepare it exactly
as called for by your printed notice, as the partic-
ular work on which John Hanley is engaged is not of
a commercial nature, but comes under the head of an
enterprise necessary to the National interest.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

[ATTACHMENT/ENCLOSURE]

State of New Jersey, }
} ss.
County of Essex }

William H. Meadowcroft, of Monton, N.J., being duly sworn, deposes and says that he is the personal Secretary of Thomas A. Edison, and as such is familiar with the facts covered by this affidavit.

Mr. Edison is conducting some experiments for the United States Government at the request of the Secretary of the Navy, and during the progress of this work had been absent from the Laboratory several months and is at present at Key West, Fla., conducting such experiments.

John Hanley of 571 Hunterton Street, Newark, N.J., was confined about a year ago by Mr. Edison to assist him in these experiments, and has been working thereon ever since until a few weeks ago, when an ulcer developed on one eye, and Mr. Edison sent him home so that he might go to a good hospital in New York to have the eye attended to.

I am informed and believe that said John Hanley, has been continuously under the care of physicians, and has just been discharged from the Manhattan Eye and Ear Hospital in New York after an operation. Mr. Edison has requested that he be sent back to Key West as soon as he is better to continue in the experiments on which said Hanley has been confined.

The experiments which Mr. Edison has been conducting for the Government, as aforesaid, cannot be classified as coming under the head of Industrial Production, as Mr. Edison does not charge the Government anything for his personal time and work, but only the actual cash outlay. As soon as John Hanley recovers to me that he is ready for work, I shall send him down to Mr. Edison at Key West, unless I receive prior instructions to the contrary.

Subscribed to and sworn
before me this 1st day of
April, A. D. 1918.

ADDRESS REPLY TO
"THE ATTORNEY GENERAL"
AS REFERRED TO
INITIALS AND NUMBER

W.M. O. B.

DEPARTMENT OF JUSTICE, WFO:MB
WASHINGTON, D.C.

Just

April 1, 1918.

Thomas A. Edison, Esq.,
United States Naval Station,
Key West, Florida.

Sir:

It is the understanding of this Department that your assistant, Bruce K. Silver, recently assigned to conduct certain experiments at Washington, D. C., in conjunction with Dr. Walter T. Scheele, is compensated from a fund placed at your disposal by the Secretary of the Navy out of a special appropriation for such work, the payments to Mr. Silver being made by you direct.

He expresses the opinion that it is important he remain here two or three weeks as he believes he can secure from Dr. Scheele information and assistance which will prove to be of great value to the Government.

It is therefore suggested that in order to avoid confusion, you instruct him to submit his accounts to you in the same manner as heretofore during such time as he may continue to be engaged with Dr. Scheele.

Respectfully,

For the Attorney General.

C. M. L. G.
C. M. L. G.
Assistant Attorney General.

W E S T E R N U N I O N

TELEGRAM

GEORGE W. C. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

BELVIDERE BROOKS, VICE-PRESIDENT

| RECEIVER'S NO. | TIME FILED | CHECK |
|----------------|------------|-------|
| | | |

SEND the following Telegram, subject to the terms
on back hereof, which are hereby agreed to

April 2 1918

To W. H. Knierimc/o Commandant, U. S. Naval Station
Key West, Fla.Give 500 ohm receivers, one hair felting, and two
hard rubber delinued Mallory line yesterday to go
by todays boat. See Mr Edison.W. H. MacdonoughReut. Apr. 12q. 15 am.SENDER'S TELE-
PHONE NUMBERSENDER'S ADDRESS
FOR ANSWER

W.H.M.

April 2, 1912.

Officer in Command,
U. S. Signal Corps Laboratory,
Little Silver, N.J.

Dear Sir:

This letter will be presented to you by
Mr. S. C. Langley of our laboratory.

As you are probably aware, Mr. Edison has
been conducting a series of experiments for the
Government for many months past. He is now down
at Key West, Fla. For these experiments he de-
sires a small motor, which Mr. Langley will describe
to you.

Mr. Edison had heard that the Signal Corps
had developed a motor of this kind, and I telegraphed
yesterday to Mr. Jarvis Butler, the Chief Clerk of
the General Board, Navy Department, asking him to
step over to see Captain Gray of the Signal Corps
in Washington, to see if one of these small motors
could be spared for Mr. Edison's use, assuming that
the Signal Corps had such a motor on hand.

I enclose, herewith, copy of Mr. Butler's
reply. Hence, I am sending Mr. Langley down to
see you in the matter, believing that this will be
the shortest way, and Mr. Edison's requirement is
very urgent.

Can you help us out?

Yours very truly,

Assistant to Mr. Edison.

A.

PRESTON S. MILLAR,
GENERAL MANAGER.

CLAYTON H. SHARP, PH.D.
TECHNICAL DIRECTOR.

W.W. I - Experimental Work
F.H. FARMER, H.C.
CHIEF ENGINEER
(Illumination Data)

ELECTRICAL TESTING LABORATORIES

GENERAL OFFICE AND LABORATORIES

BOTY ST. AND EAST END AVE.
NEW YORK

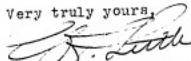
April 2nd, 1918.

Mr. William H. Knierim,
c/o Edison Party,
U. S. Naval Station,
Key West, Fla.

My dear Mr. Knierim:

With further reference to my letter of last week, in reference to work done in Key West between February 18th and 27th inclusive, I regret to advise that I find an error in the time. If you will remember we worked out the apparent time for Key West in terms of 75th meridian time and my notes show the time values so secured as 19 minutes earlier than standard 75th meridian time for the same date. In checking up my values I find that it should be 41 minutes earlier than the 75th meridian time, or 19 minutes later than 90th meridian time. I am very sorry that there was any misunderstanding at the time we worked out these values and it was not until after the report was written that the error was discovered. However, if you deduct 21 minutes from all time values in the tables forwarded to you, you will have the correct information.

I am having the tables rewritten which will cause some little delay; however, I hope to forward the final report to you by the end of this week.

Very truly yours,

W.F.L.C.
Engineer in Charge of Photometry.

W.F.L.C.

Fern 1001

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telegram | |
| Day Letter | Blue |
| Night Message | None |
| Night Letter | N.L. |

If more than three symbols appear after the check (number of words) this is a telegram. Otherwise it is a letter. If there is no symbol appearing after the check,

WESTERN UNION

TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telegram | |
| Day Letter | Blue |
| Night Message | None |
| Night Letter | N.L. |

If more than three symbols appear after the check (number of words) this is a telegram. Otherwise it is a letter. If there is no symbol appearing after the check,

RECEIVED AT 238 MAIN ST.
EDNY H 89 ORANGE, N.J.

KEY WEST FLO APRIL 2-18

W H MEADOWCROFT

EDISON ORANGE NJ

SEND BY EXPRESS TWELVE ADDITIONAL FIVE HUNDRED DOLLAR TELEPHONE RECEIVERS
IMMEDIATELY TRANSFER OF OFFICERS AND MEN SACHEM AND REPOSO JUST
COMPLETED LIEUT WARREN HARRIS NOW IN COMMAND OF SACHEM REPOSO
LIEUT PATTON IN COMMAND WILL BE RELEASED AND RETURNED TO
FORMER HEADQUARTERS MRS EDISON BRIDE AND GROOM FREDDIE HERE.

CHARLES B HANFORD

725AM APRIL 3

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Teletype | |
| Day Letter | Blue |
| Night Message | Nite |
| Night Letter | N.L. |

If none of these three symbols appears after the check (check of one or more boxes) this is a Telegram. Otherwise it is a Teletype message. The symbol appearing after the check indicates which character is indicated by the symbol appearing after the check.

WESTERN UNION



TELEGRAM

NEWCOMB CALTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Teletype | |
| Day Letter | Blue |
| Night Message | Nite |
| Night Letter | N.L. |

If none of these three symbols appears after the check (check of one or more boxes) this is a Telegram. Otherwise it is a Teletype message. The symbol appearing after the check indicates which character is indicated by the symbol appearing after the check.

RECEIVED AT 238 MAIN ST.
ORANGE, N.J.
BNY H 90 5 EX-
BT EAST PITTSBURG PA 1003 AM APRIL 3-18
W H MEADOWCROFT
EDISON LABORATORY ORANGE NJ

REFERRING TO CONVERSATION WITH J JARVIS BUTLER WE HAVE NO STOCK MOTORS
BALL BEARINGS TO OPERATE AT FOUR THOUSAND REVOLUTIONS PER MINUTE SIX VOLTS
HAVE MOTORS FOUR AND ONE HALF INCHES DIAMETER SIX INCHES LONG WHICH
COULD BE REWOUND WOULD REQUIRE ABOUT ONE WEEKS TIME ALSO MOTORS THREE AND
ONE HALF INCHES DIAMETER SIX INCHES LONG WHICH COULD BE BUILT UP IN TEN
DAYS ADVISE OUTPUT OR EFFICIENCY REQUIRED WHEN MACHINE IS OPERATED AT SIX
VOLTS SIX AMPERES ALSO IF LOWER SPEED WOULD BE SATISFACTORY. 908

F CONRAD

4963

WESTINGHOUSE E AND M CO

1230PM

TELEPHONE 42-3211
TELEPHONED TO 42-3211

v

April 3, 1910.

Western Electric Co.,
463 West Street,
New York, N.Y.

Gentlemen: Attention Mr. H. H. Colpitts:

Confirming my telephone conversation with you this morning, I am enclosing Purchase Order covering twelve 500 ohm Hand Telephone Receivers, which are to be made up same as the lot of six, which I received from Mr. P. L. Wild a few days ago.

Will you kindly expedite the making of these receivers as much as possible, as Mr. Edison is urgently in need of them. When they are ready, I would like to have them to ship them from here.

If you have not a Messenger convenient, kindly write or telephone me and I will send a messenger over for them.

Thanking you for your courteous attention, I remain,

Yours very truly,

Assistant to Mr. Edison.

A/4946.

500 Ohm Receivers for Mr. Meadowcroft
Case 650399

F. D. JEWETT
CHIEF ENGINEER
J. L. MCQUARRIE
ASSISTANT CHIEF ENGINEER
E. B. CRAFT
ASSISTANT CHIEF ENGINEER
E. H. COLPITT
ASSISTANT CHIEF ENGINEER
W. F. HENDRY
ASSISTANT CHIEF ENGINEER

Western Electric Company.

INCORPORATED
ENGINEERING DEPARTMENT
463 WEST STREET

NEW YORK

April 4, 1916.

IN REPLY REFER TO
HEN-1231-GK
REPLYING TO

Mr. William H. Meadowcroft,
Thomas A. Edison, Inc.,
Orange, New Jersey.

Dear Sir:

I have your letter of April 3rd enclosing an order
for twelve additional 500 ohm hand telephone receivers. In accordance
with your conversation with Mr. Wier, we are making these with
hard rubber spools similar to the lot of three now being made up
instead of using varnished linen spools similar to the lot of six
previously furnished.

We will make every effort to deliver the lot of three
receivers now being made up about April 11th and the additional lot
of twelve receivers about April 19th. We will communicate with you
so that you can send a messenger for them as soon as they are completed.

Very truly yours,

E.H.Califit

Assistant Chief Engineer.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT;
WILLIAM L. SAUNDERS,
CHURMAN;
BENJAMIN B. THAYER,
Vice Chairman;
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

April 4, 1918.

Mr. W. H. Meadowcroft,
Edison Laboratory,
Orange, N. J.

Dear Sir:

I enclose herewith some new letterheads for Mr. Edison. These you will note are corrected as to the names of the officers of the Board. This lot is a rush order and its appearance is not up to that of the others, but it will do until the regular new lithographed letterheads are ready, which will be in about a week. A supply will then be sent you, but in the meantime I would request that you use those enclosed and either return or destroy the old letterheads which give the names of the officers incorrectly.

Very truly yours,
G. C. Trefry Jr.
Ass't. to Mr. Robins.

GT
Enc.

April 6, 1918.

Mr. Frank Conrad,
c/o Westinghouse Electrical & Mfg. Co.,
East Pittsburgh, Pa.

Dear Mr. Conrad:

I trust you will kindly excuse the delay in acknowledging receipt of your telegram of the 3d instant. I have been obliged to communicate by wire with Mr. Edison, who is down in Florida in order to find out whether the small motors you describe would answer his purpose. His requirements ran within exceedingly narrow limits, and we were requested to look around a little further to see if we could find exactly what he wants.

We have been fortunate enough to discover in an obscure place a motor that answers the specifications exactly and we are going to hand it down to Mr. Edison.

If he should desire one or more of those which you kindly offer, I shall advise you.

In the meantime, please accept the thanks which I offer you in Mr. Edison's behalf for your prompt and courteous attention.

Yours very truly,

Assistant to Mr. Edison.

A/4963.

CABLE ADDRESS
"BISGUTPER"
NEW YORK

BISHOP GUTTA-PERCHA CO.



INSULATED WIRE AND GUTTA-PERCHA GOODS

420 TO 430 EAST 25th STREET

NEW-YORK, April 6th 1918.

Meadowcroft

Mr. Thomas A. Edison,
Navy Yard,
Key West, Florida.

My Dear Mr. Edison:-

We probably leave
Key West April 20th if
not shipped tell him to
not ship till we get north
Upon receipt of letter sometime
since from Mr. Shaffner advising us that the cables
which we furnished you for experimental work has not
proved satisfactory. We entered a shop order for two
more cables similar to the ones we had furnished, but
arranged to substitute copper wire for the outside
conductor instead of the tinned steel wire, we also
had omitted the wind of cotton over the outside conductor
which may have been the cause of the trouble which you had.

We are shipping you today one of these
cables. After having this cable submerged in salt water for
24 hours we connected the center conductor to ground and
applied 1,000 volts for 5 minutes, we then tested the
insulating resistance and found that the insulation from
the outside conductor to ground gave 2770 mega per mile,
we therefore believe that this cable should work satisfactory
and would like very much to have you try it out.

The other cable referred to is well
along and will probably be ready for shipment within the
next week.

Hoping that you have better luck with
these two cables than you did with those we formerly made
we remain.

Mr. Edison
I telephoned Mr. Reed this morning. Yours very truly,
He says that the second cable was BISHOP GUTTA PERCHA COMPANY,
shipped 3 days after the first one. BY H. D. Reed
Both wire shipped by Matson Line. Vice President.
So you ought to receive both before
you leave. Meadowcroft

April 13/18

Calvin E. Cook
Experiments at Key West

U. S. S. "CLIO" 1911.
Naval Station Key West Fla.
April 7th 1918.

From: Commanding Officer.
To: Mr. Thos. J. Wilson.
Subject: Experiments with stem anchor "CLIO", turning circle
with 9 ft sea anchors.

1. The following tests were made at the entrance to
the main ship channel, Key West, Fla. The water was very rough
and a stiff Northeast wind blowing on a flood tide. The
wind force was about 5.

2. The U. S. S. "CLIO" built in 1910 at Rotterdam.
Length 325 feet, beam 44 ft., draft 13 ft., displacement
in ft. is 4444 to 4537, which in tons is equal to 4600 to
4610. The draft during these experiments was 17.3 ft.
Fore and 1.5 ft. aft.

| Ship's course | bearings on blocking buoy: bow anti-starboard | port. | chors. | course. |
|---------------|---|-------|--------|---------|
| 189° | 329° | 85° | 0 | 1'18" |
| 189° | 537° | 97° | 2 | 1'14" |
| 189° | 329° | 99° | 4 | 1'18" |

3. In the third experiment all four anchors were put over
and were holding and as soon as the terrific strain of the ship
fell against the lines all four pulling lines parted, therefore
the result of the third test was practically the same as
that of No. 1.

4. Following is the conclusion of the percentage of the
advances cut down with anchors from the ships natural advance.

Position No. 1 natural advance 300 ft.
Position No. 2 two sea anchors, advance 180 ft.
Position No. 3 all lines parted advance 260 ft.

5. Owing to the limited time which was a total of
one hour and forty five minutes for the actual experimental
work, we were unable to go through according to your instructions
of taking the ships natural turning circle, and working
from one anchor up to four, and owing to the risk of taking
loaded cargo ship up into the torpedo range in inclement weather
we were unable to set the buoys in a line for accurate measurement,
as of previous tests. In conclusion the anchors held
and pulled at an angle of 30°, and maintained that position,
until the complete circle was made. According to this information
we cut down the advance of the USS "CLIO" loaded with
54.7 tons of coal 30% *approximately*.

Hendee
100 m/s ft.

J. H. Stevens

Form 1201

WESTERN UNION
TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telex | |
| Day Letter | Blue |
| Night Message | None |
| Night Letter | N L |

If none of these three symbols
is checked, this is a telegram. Otherwise,
it is a teletype message. Other
symbols sometimes appear on checks.

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telex | |
| Day Letter | Blue |
| Night Message | None |
| Night Letter | N L |

If none of these three symbols
is checked, this is a telegram. Otherwise,
it is a teletype message. Other
symbols sometimes appear on checks.

RECEIVED AT 288 MAIN ST.
 9 NYR 33 NEW YORK, N.Y.

KEY WEST FLA APR 8 1918

WILLIAM H MEADOWCROFT

ORANGE NJ

SEND MOTOR WITHOUT BALL BEARINGS BY EXPRESS RUSH, ORDER THE
 OTHER WITH BALL BEARINGS WHICH YOU CAN HOLD TILL I
 GET HOME ORDER THE TWELVE FIVE HUNDRED OHM PHONES AND
 KEEP AT LABORATORY

T A EDISON

7 33AM APR 9

April 8, 1918.

Kear-Admiral W. Strother Smith, U.S.N.,
Navy Department,
Washington, D. C.

My dear Admiral:

Referring once more to your esteemed favor of the 18th ultime, the following is a list of names of the men working in connection with or under Mr. Edison in his experiments for the Government. This list covers only our own people and does not include any of the members of the crews or other Government employees who may assist Mr. Edison from time to time on the various experiments:

H. G. Wolfe,
W. H. Kniorim,
Ed. P. Ott,
W. A. Hayes,
John Hanley,
James Burns,
Sherwood Moore,
Wm. Deane,
Bruce K. Silver, and

Andrew Thompson, loaned by Carnegie Institute.

All the above are working with Mr. Edison on naval experiments. There are three others working with him on some experiments for the War Department, but I suppose that you are not interested to have those names.

Yours very truly,

Assistant to Mr. Edison.

A/4977.

P.A

April 12, 1918.

Mr. J. O. H. Pitney, Chairman,
U. S. War Department,
District Board for Division No. 2 of New Jersey,
752 Broad Street,
Newark, N.J.

Dear Sir:-

Your notice regarding Industrial Claims, in regard
to William Deans of East Orange, N.J., has been received.

I have prepared an affidavit, which is enclosed herewith.
You will see from this affidavit that it is not quite
possible to prepare it exactly as called for by your printed
notice, as the particular work on which William Deans is em-
ployed is not of a commercial nature, but comes under the head
of an enterprise necessary to the National interest.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

[ATTACHMENT/ENCLOSURE]

State of New Jersey,)
County of Essex.)

William H. Meadowcroft, of Boonton, New Jersey, being duly sworn, deposes and says that he is the personal Secretary of Thomas A. Edison, and as such is familiar with the facts covered by this affidavit.

Mr. Edison is conducting some experiments for the United States Government, at the request of the Secretary of the Navy, and during the progress of this work he has been absent from the laboratory several months and is at present at Key West, Florida, conducting such experiments.

William Deans, of 236 So. Burnet Street, East Orange, New Jersey, was employed in May, 1917, by Mr. Edison to assist him in the above named experiments, and has been working thereon ever since that time, and at present is so employed with Mr. Edison at Key West, Florida.

The experiments which Mr. Edison has been conducting for the Government, as aforesaid, cannot be classified as coming under the head of Industrial Production, as Mr. Edison does not charge the Government anything for his personal time and work, but only the actual cash outlay.

Subscribed to and sworn before me this 12th day of April, A. D. 1918.

[ATTACHMENT/ENCLOSURE]

U. S. WAR DEPARTMENT
DISTRICT BOARD FOR
DIVISION No. 2 OF NEW JERSEY

OFFICE, MUTUAL BENEFIT BUILDING

752 BROAD STREET

JOHN O. H. PITNEY, CHAIRMAN
HENRY F. HILFERS, SECRETARY
AUGUSTUS V. HAMBURG
BENJ. VAN D. HEDGES, M. D.
WILLIAM J. KIRBY
CHARLES H. MYERS
EXECUTIVE SECRETARY

Newark, N. J., January 10, 1918.

NOTICE REGARDING INDUSTRIAL CLAIMS

In order to properly determine the status of registrants claiming deferred classification on the ground that they are necessary employees of an enterprise necessary to the National interest, this Board will require, in addition to the formal proof submitted with the Questionnaire, further proof by affidavit of the executive officer, Superintendent or Manager of the industry as to the character of the Government work in which it is engaged, the proportion of Government work to the total output of the industry, registrant's relation to Government work, his weekly wages, and such other specific facts as would indicate his importance to the industry and the importance of the industry to the Government.

This proof should be filed with the Questionnaire, or with this Board if the Questionnaire has already been filed. It should be typewritten on one side only of white paper of the approximate size of the Questionnaire and should be as brief as possible.

J. O. H. PITNEY,
Chairman.

William Decker *No information required with respect to claim of*
Legal Board, Inc. *East Orange*
In replying please mention registrant's name
Board of Appeals, Newark, New Jersey

*(Returned by Mr. Edison
without comment)*

April 13, 1918.

Mr. Edison:

About that small motor. It has been quite a big problem. Langley went around and could not find anything like what you wanted except at one place, and that was the Crocker-Wheeler Co. They had made a few motors almost identical with what you want, and they had made them for the Signal Service Corps.

They told us this confidentially. Therefore we could not give them away. So I telephoned to our friend Butler in Washington and explained our difficulty and I asked him to go over and see the head of the Signal Service Corps and to ask them if they had any small motors and whether they could spare one for you. He told them just what you wanted, *as to dimensions &c.*

They told Butler that they had had some small motors made by the Crocker-Wheeler Co., but they had all been sent down to the Signal Service Corps Laboratory at Little Silver, N.J. This opened the way, and I sent Langley down to Little Silver to see the Officer in Charge. He told Langley that the Crocker-Wheeler Co. had made them some small motors like what you wanted, and that if the Crocker Wheeler Co. could obtain the permission of the Signal Service Corps, they could make one for you.

That, of course, opened the way officially, and Langley went to the Crocker-Wheeler Co. and told them. They stated it was no use writing or telegraphing, but they had a man going down to Washington in three days and he would try to get the permission of the Signal Service Corps, allowing them to build one of these motors for you. Their man went down last Tuesday, and he was to telephone back to the Crocker-Wheeler Co., but up to this morning they had not heard a word from him and do not know whether he is dead or alive. I am pushing this in every way that I can and will keep after it.

In the meantime, Langley, in looking through a pile of junk, discovered a small motor with ball bearings, that, with some reconstruction and rewinding, will probably answer your purpose. We have been working on this, day and night, and expect to complete it Monday. If so, I will send it down in care of one of the Officers of the Mallory Line steamer, sailing Tuesday.

The motor without ball bearings was ordered from the General Electric Co. and is to be finished about next Tuesday. If it comes time enough, I will send it down to you. If not, I will keep it here until you come, and also the other Crocker-Wheeler motor if they can get permission to make it for you.

We have done everything possible, as you will see, and I am only sorry that we could not get this motor as quickly as you wanted, but it is very special.

Meadowcroft

To: Thomas C. Edison
From: A. Girbode.
P.D. Payne.

Statement.

Strainrod—Began work developing running light stabilizer March 3, 1918.
Time out is ..

Time put in.

| | date | time | date | time | hours |
|---------------------------|---------|------|-------|----------|-------|
| Sun | March 3 | 6.3 | Sun | March 17 | 10 |
| Mon | " 4 | 6. | Mon | " 18 | 4 |
| Tue | " 5 | 4 | Tue | " 19 | 6 |
| Wed | " 6 | 6 | Wed | " 20 | 4 |
| Thurs | " 7 | 4 | Thurs | " 21 | 6 |
| Fri | " 8 | 4 | Fri | " 22 | 14 |
| Sat | " 9 | 6 | Sat | " 23 | 12 |
| Sun | " 10 | 8 | Sun | " 24 | 12 |
| Mon | " 11 | 4 | Mon | " 25 | 6 |
| Tue | " 12 | 4 | | | 4 |
| Wed | " 13 | 6 | | | 6 |
| Sat. | " 16 | 8 | | | 6 |
| | | 6.7 | | | 8 |
| | | 12.3 | | | 8 |
| | | 10.8 | | | 8 |
| | | 11.2 | | | 8 |
| | | 12.2 | | | 8 |
| | | 13.8 | | | 11 |
| | | 14.8 | | | 8 |
| | | | | | 12.3 |
| actual time in days 23.97 | | | | | |

@ \$40.00 per week each 23 3/4 days 158.33
158.33

Tola Shire due 316.66

Material Used 15.00
Six ball bearings (S.K.H.) @ 0.50 331.66

March 25, 1918. Rec'd from Mr. Edison 60.00 owing
A meausur'd line 2.51 .66

Day Letter

WESTERN UNION

TELEGRAM

Form 102

GEORGE W. E. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

BELVIDERE BROOKS, VICE-PRESIDENT

RECEIVER'S No.

TIME FILED

CHECK

SEND the following Telegram, subject to the terms
on back hereof, which are hereby agreed to:

April 16 1918

To Thomas A. Edison

U. S. Naval Station Key West
Langley finished and tested small motor One
hundred twenty volts direct side thousand revolutions.
Have sent special messenger with it to Express Company
Jersey City with letter certifying them to rush delivery
Meadowcroft

Sent 4/16/18
3:20 PM

Letter

SENDER'S TELE-
PHONE NUMBER

SENDER'S ADDRESS
FOR ANSWER

April 18, 1918.

Rear-Admiral W. Strother Smith, U.S.N.,

Navy Department,

Washington, D.C.

My dear Admiral:

Allow me to send you herewith our Laboratory bill for experimental work done by Mr. Edison covering a period, January 31st to March 31st, 1918, at cost, amounting to \$11,612.78. This bill is sent to you in duplicate, certified to by Mr. Edison.

When the check is ready, you can forward it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

A/5043.

Enclosure.

April 18, 1918.

Hon. Newton D. Baker,
Secretary of War,
Washington, D. C.

Dear Mr. Secretary:

Allow me to hand you herewith
our laboratory bill for experimental work done
by Mr. Edison covering a period, January 31st
to March 31st, 1918, at cost, amounting to \$7,331.13.
This bill is sent to you in duplicate, certified to
by Mr. Edison.

When the check is ready, you can forward
it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

A/5044.

Enclosure.

HM 450-3-30-16 SCM

CROCKER-WHEELER COMPANY

MANUFACTURERS OF ELECTRIC MOTORS, GENERATORS AND TRANSFORMERS

ALTERNATING AND DIRECT CURRENT

QUOTATIONS ARE BINDING ONLY WITHIN TWENTY DAYS FROM THEIR DATE

IN REPLY PLEASE REFER TO



AMPERE, N.J., U.S.A.

April 18, 1918

Mr. W. H. Meadowcroft,
Thos. A. Edison Laboratory,
West Orange, N.J.

Dear Sir:

In accordance with advices received from the Signal Corps, U.S. Army, Washington, D.C., we are delivering to you One (1) 36-watt, 6-volt, direct current generator, self-exciting, made for wind drive airplane service.

This machine is the property of the Signal Corps, and, instructing us to deliver same to you, the Signal Corps request us to say that you should make no change in the machine without first taking the matter up with them and getting their approval.

In case you should desire to make any changes in the machine, you should communicate with Captain G. Francis Gray, Signal Corps, U.S. Army, Washington, D.C., advising to what extent you desire to make changes, and he will let you know if the Department approves.

When you are through with the machine, you are to dispose of it in accordance with instructions you get from the Signal Corps.

Yours very truly,

CROCKER-WHEELER COMPANY

H. E. Petty
Asst. Sales Manager.

HOP.-LT

*Recd. April 11, 1918
from [unclear]
H. E. Petty
Sales Manager
C. C.*

5051
G. Johnson

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON, ^{PRESIDENT.}
WILLIAM L. SAUNDERS,
BENJAMIN D. THAYER,
THOMAS ROBIN^{S, VICE-PRESIDENT,}
^{SECRETARY.}

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

APR 18 1918

To the Members of the Naval Consulting Board:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
APR 27 1918 in the Carnegie Institution, Wash-
ington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS,

Secretary,
NAVAL CONSULTING BOARD.

Per *gms*

April 19, 1918.

Mr. B. R. Silver,
c/o of Mr. Richmond Levering,
Special Agent, Dept. of Justice,
112 Broadway,
New York, N.Y.

Dear Mr. Silver:

I have received your note of yesterday,
together with your expense account. The latter has
been J.M.'d and sent up to Mr. Spindle for his attention.

I certainly was surprised to see the post-mark,
but I have quietly forgotten it, as I suppose I ought
to do so. Undoubtedly you have an interesting story
under your hat, and I shall look forward to the hearing
of it with anticipation of much interest.

Mr. Edison and Mr. Dunford are booked to leave
Key West next Tuesday, the 25th instant, and will come
right straight through to Havana and thence home. The
remainder of the party will probably leave the same day
on the steamship, and come up by the water route. I heard
from Mr. Benford that experiments are turning out quite
satisfactorily.

I presume that you are looking forward to the
day when you rejoin the crowd and proceed further with
your experimental work, as I understand you left it at
a very interesting moment.

With kindest regards, I remain,

Yours sincerely,-

A/Bob.

April 10, 1910.

Mr. Conover Pitch, Vice-Pres.,
Waltham Watch Company,
Waltham, Mass.

Dear Sir:-

Last summer you very kindly extended some assistance to Mr. Edison in his Government experiments by the loan of a special eight-day movement.

As this particular experiment has been finished, Mr. Edison desires me to return the movement to you and to extend his cordial thanks for your kind cooperation in this matter.

The movement will go forward to you by express, prepaid.

Yours very truly,

Assistant to Mr. Edison.

A/5319.

*W.W.I -
EXP. WORK*

EXHIBIT 16.

April 20, 1918.

5.75" French Torque Minter Plug:

The Government is ready to immediately place an order for 100,000 of these plugs, delivery to start in from 6 to 8 weeks, the total amount to be given out being \$60,000.

Of this lot of 600,000 to be given out, Captain Minton states that we will get our share. This will probably be 300,000 to start with. We are assured that all of the equipment we may purchase for this part will be kept busy, at least for the length of time the war will last. This can't be stated officially, but is based on the fact that the 600,000 now being given out makes a total of 1,300,000 since January 1st, and there are said to be more to follow. Mr. Owen vouches for this statement, as he has seen the requirements from the Procurement Division, and knows that more will follow the present allotment of 600,000, approximately an amount equal to or exceeding this. Captain Minton likewise assured us this business would be turned over to us.

Therefore, the Planning Board recommends to the Executive Committee that an appropriation be made to the Phonograph Works of \$40,000, to cover the purchase of as many as 12 Gridley Automatic Screw Machines for the manufacture of this plug, this sum also covering the moving of equipment and installation of same.

It is recommended that new machinery be purchased and not old machinery, as the difference in price is not great and new machinery obviously gives better service.

The floor plan layout of the Six Teeth Building has already been started for the installation of the new machinery.

The Planning Board recommends to the Executive Committee for very serious consideration the necessity for doing Government work on an 8 hour day basis, which would appear to be compulsory under the provisions of an Act of Congress dated June 9, 1912, a copy of which Act is on file here.

The Board feels that as this will effect the general labor situation throughout the Edison organization, it is a subject for serious consideration and a decision on it must be reached at once, or we may be prevented from handling the Government work contemplated.

-----00-----

COPY

April 22, 1918.

Mr. Thomas A. Edison,
Key West, Fla.

My dear Mr. Edison:-

I thank you very much for your letter of April
15.

It is somewhat comforting for me to know that
you too have been up against the same Bureau chiefs who
have been blocking progress in the anti-submarine work.
Instead of their helping to win the war, they are the
very men who, in my opinion, are most responsible for the
continuance of the war.

I am satisfied, and anyone else who had used
the latest detectors would be satisfied, that their adop-
tion on a large scale would put an end to the submarine,
and that means an end to the war, but the old fogies are
not willing to admit that the Navy needs any help from
outside. The public does not know this, and it wouldn't
believe it unless the statement were made by you, and I
hope that before long you will make a public statement.
If this were done, it would probably lead to the retire-
ment of the majority of the present Bureau chiefs and
the substitution of younger men and possibly some civil-
ians, for even the young men in the Navy are, as a class,
very narrow-minded. But there will not be any improve-
ment until you explode.

Sincerely yours,

THOMAS EDISON

TR:S

[ATTACHMENT/ENCLOSURE]

In Meadows

a copy of this M.W.
to Key W.M. on 22nd.

Robin handed me this
copy to give M.E. —

new

Form 1201

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these three symbols appear after the check (mark of service) this is a Telegram. Otherwise it is a Message. Other symbols appearing after the check indicate:

WESTERN UNION



TELEGRAM

NEWCOMB CANTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telex | Blue |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If none of these four symbols appear after the check (mark of service) this is a Message. Otherwise it is a Telegram. Other symbols appearing after the check indicate the class of service indicated by the symbol preceding the check.

RECEIVED AT COR. MAIN ST. & ESSEX AVE.,
ORANGE, N. J.

62NY H. 7 TELEPHONE ORANGE 4361

JACKSONVILLE FLO 992 AM APRIL 27-18

THOS A EDISON

EDISON LABY ORANGE NJ

SACHEM AT JACKSONVILLE LEAVING FOR NORFOLK SUNDAY.

KNIERIM

1105AM

TELEPHONE NO. 908
TO Mr. Headway
AT 11.07
DISPOSITION

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT,
WILLIAM L. SAUNDERS,
CHAIRMAN,
BENJAMIN S. TURNER,
VICE CHAIRMAN,
THOMAS ROBINSON,
SECRETARY.

OFFICE OF
MILLER REESE HUTCHISON, E. E. PH. D.
MEMBER AND ASSISTANT TO THE PRESIDENT
EDISON LABORATORY
ORANGE, N. J.

Supervised by [unclear] of [unclear] by [unclear]
April 29, 1918.

Mr. T. A. Edison, President,
Naval Consulting Board,
Orange, N. J.

Subject: Visit to New London, Conn.

Reference: Telephone conversation with Secretary
of the Navy this day.

Enclosure: Copy of letter to the Secretary of the
Navy.

Dear Mr. Edison:

1. The arrangement which best suits the convenience of
Secretary Daniels is as follows;

(a) He will leave Washington on the midnight Friday,
arriving at Pennsylvania Station about 7 AM
Saturday, and go immediately to the Bureau of
Information at Grand Central Station to join us.

2. I will have two cars at your house Saturday morning
at 5:45 AM. One of the cars will take us in and the other car
will follow in case of puncture. We will go to the Grand Cen-
tral Station, and I will take you to the dining room. I will
then go to the Bureau of Information and await the Secretary,
escorting him to our table.

3. I have arranged for transportation for yourself, Sec-
retary Daniels, Mr. Saunders and myself, as Mr. Saunders desires
to be present at the test.

4. I have arranged with Captain Hepburne, commanding the
submarine base, to meet us at the dock at New London and we can
proceed immediately on the test.

5. The Secretary will return on the "Colonial" leaving
New London 10:33 Saturday night, so he can arrive in Washington

Mr. Thos. A. Edison.

- 2 -

April 29, 1918.

Sunday morning in time to keep an appointment there. He wishes me to say that if in your judgement you have not thoroughly investigated the device, you will please stay there and thoroughly familiarize yourself with the apparatus in order that you may advise him of the efficacy of the device from a technical standpoint. I will remain in New London as long as you remain. It will not be necessary for Hanford to go further than New York, and I am advising him accordingly.

6. I am going to New Haven to-morrow morning to witness tests on some device which Lindon Bates, Chief Engr. of Submarine Defense Association wishes to show me. His boat will take me to New London, and I am arranging to have a conference with the men who have the submarine apparatus in charge on Tuesday evening. I will spend Wednesday conducting tests on the apparatus and will work out an itinerary for Saturday. I will return to New York not later than Thursday afternoon and will report to you in detail. I will then remain in Orange Thursday and Friday, to go with you to New York Saturday morning.

7. I will take my camera along in order that we may have graphic illustrations to embody in such report as you may make to the Secretary subsequent to your tests of the device.

8. If Mr. Meadowcroft will communicate with my Secretary, my whereabouts can be ascertained at all times during my absence.

Respectfully,



[ATTACHMENT/ENCLOSURE]

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
PETER COOPER HEWITT,
VICE-PRESIDENT.
WILLIAM L. SAUNDERS,
TREASURER.
THOMAS ROBBINS,
SECRETARY.

OFFICE OF
MILLER HENSE HUTCHISON, E. E. PH. D.,
MEMBER AND ASSISTANT TO THE PRESIDENT
EDISON LABORATORY
ORANGE, N. J.

April 29, 1918.

Hon. Josephus Daniels,
Secretary of Navy,
Washington, D. C.

Subject: Visit to New London, Conn.

Reference: Telephone conversation of this day.

Enclosure: Copy of memorandum to Mr. Edison.

My dear Mr. Secretary:

1. I have arranged as follows:

(a) Mr. Edison and myself will join you at breakfast at the main restaurant, Grand Central Terminal at about 7:15 AM, Saturday May 4th. I would suggest that when you arrive at Grand Central Terminal you go direct to the Bureau of Information, Main Concourse where I will be awaiting you in order that I may escort you directly to the restaurant.

2. I have bought tickets and drawing room for;

- (a) Yourself,
- (b) Mr. Edison,
- (c) Mr. W. L. Saunders, and
- (d) and myself,

to New London, Conn., departing on the 8:31 train, NY NH & H RR.

3. Captain Hepburne will meet us at New London Station and we will proceed immediately to the work in hand.

4. I have reserved and will purchase for you a section on the "Colonial", leaving New London at 10:33 PM Saturday, and arriving at Washington at 6:30 AM Sunday morning. This will enable you to retire early and get a good night's rest, and will oblige the necessity of your hurrying to New York to catch the midnight train from there.

[ATTACHMENT/ENCLOSURE]

Hon. Josephus Daniels.

April 29, 1918.

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT
PETER COOPER HORTON,
VICE PRESIDENT
WILLIAM L. SAUNDERS,
TREASURER
THOMAS ROBBINS,
SECRETARY.

OFFICE OF
MILLER REESE HUTCHISON, E. E., PH. D.
MEMBER AND ASSISTANT TO THE PRESIDENT
EDISON LABORATORY
ORANGE, N. J.

5. If Mr. Edison has not finished the work in hand by Saturday night, he will no doubt, remain over Sunday at New London, Conn.

Respectfully,

MEMBER

MHH-WRB.

Copies to Mr. Edison,
Mr. Robins,
Mr. Saunders,
Capt. Hepburne,
File.

April 29, 1918.

My dear Mr. Daniels:

I have received your favor of the 27th instant, in regard to visiting the Laboratory at New London.

I shall be glad to go with you at any time that suits your convenience. Please let me know when you propose to go.

Yours sincerely,

Hon. Josephus Daniels,
The Secretary of the Navy.
Washington, D. C.

A.

M Edison

Langley says

There is no stock thrust
bearing made exactly $\frac{25}{64}$ "

This is the nearest
 $\frac{13}{32}$ "

If you must have
exactly $\frac{25}{32}$ " it will
have to be specially
made.

O/C Meadowcroft
Hartford

Mrs. Edison:-

Regarding Hanby:
eye, he has received bills on
following:

| | |
|------------------------|-----------|
| Hospital - in New York | \$ 76.00 |
| Dr. Thompson's bill | 120.00 |
| | \$ 196.00 |

Will you kindly bill for payment
to be charged 5005.

OK H/C

Henry A

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
May 1918**

May 1, 1916.

Commander M. Joyce,
Superintendent,
U.S. Naval Station,
Key West, Fla.

Dear Sir:-

Having returned to my laboratory here at Orange, I look back upon my recent sojourn in Key West with pleasant recollections of the many courtesies that were extended to me by you and other persons connected with the U. S. Naval Station. Let me assure you of my appreciation of the attention you showed to me and to the members of my staff during the period of our stay in Key West.

Yours very truly,

A.

[ATTACHMENT/ENCLOSURE]

Key West. N. R. Marine Station.

✓ Mr. W. Witte, Charge marine sta., making Pay to etc.

✓ Captain F. Bailey off. Public Works
Cubas Key.

✓ E. F. Killin Strengthener

✓ Commander Mc Joyce Capt.

✓ Chief Engineer Charles Morgan. Friday Harbor

✓ Mr. G. F. Cramch Govt Mail dr. Station.

Mr. W. W. Dr. Merrill.

Liquor from Inspector. Charge of
lock where Lashon or Repairs required.
and of Shoppes. House & living quarters

POSTAL TELEGRAPH - COMMERCIAL CABLES

CLARENCE H. MACRAY, PRESIDENT.

CHECK

TELEGRAM

COUNTER NO.
TIME FILED

The Postal Telegraph-Cable Company (Incorporated) transmits and delivers this message subject to the terms and conditions printed on the back of this blank.

SEND the following Telegram, subject to the
terms on back hereof, which are herewith agreed to.

[DESIGN PATENT No. 40328]

5
600

Norfolk, Va. May 1, 1918. 191

To _____

Edison Laboratory,
Orange, N.J.

Sechem at Norfolk expect to arrive

New York Friday.

KUHLERIM.

PRESTON S. MILLAR,
GENERAL MANAGER.

CLAYTON H. SHARR PH.D.
TECHNICAL DIRECTOR.

P. H. FARMER, M.I.C.
CHIEF ENGINEER.

ELECTRICAL TESTING LABORATORIES

GENERAL OFFICE AND LABORATORIES

BOT ST. AND EAST END,
NEW YORK

Meadowcroft say bill
OK - C

May 1, 1916.

Mr. Wm. H. Meadowcroft,
Thomas A. Edison, Inc.,
Orange, N.J.

My dear Mr. Meadowcroft:

Our accounts show that the recent photometric work performed by Mr. J. I. Little of these laboratories for Mr. Edison is a part of the work which he is doing for our Government, cost us in the way of direct labor and expense \$324.16. This figure includes no overhead of any kind whatsoever.

It is my impression that Mr. Edison has an allowance from the Naval Consulting Board with which to defray the expenses of his experimental work in this connection, and that the expenses of others are being defrayed from this fund. If such is the case, and if you think it reasonable and desirable, I would suggest that we be reimbursed to the extent of our direct outlay. If my understanding of the conditions is incorrect, or if for any other reason this suggestion would prove embarrassing to you, we shall be glad to have you dismiss the matter and we shall assume the charge in this case as we did in the former instance of the work performed on Long Island.

Yours very truly,

Preston S. Millar,
General Manager.

P.S.M./P.

5113

THE NEW YORK IRON COMPANY
IRON PLATE AND SHEET METAL
NEW YORK

File

May 1, 1918.

file

Mr. Thomas A. Edison,
Orange,
New Jersey.

My dear Mr. Edison:

We have given careful consideration to the papers submitted with Mr. Meadowcroft's letter of April 17th with reference to the Schmatolla Furnace for the "Smokeless and Wasteless Combustion of Soft or Bituminous Coal".

This furnace makes use of the alternate system of firing which was developed in the locomotive field many years ago and the principle of introducing auxiliary air above the fire and through the bridge wall and side walls is almost exactly similar to the old Jencks furnace or setting for return tubular boilers which was so common twenty to twenty-five years ago.

We find that there is nothing new about this system or its methods of application. Most of the statements in the memoranda are undoubtedly true and the introduction of supplementary air facilitates smokeless combustion provided you do not burn too much coal per square foot of grate surface.

The scheme is not new or original and it would still remain a question of firing which if it is carefully done will secure results which are likely to be quite as good without the device as with it.

Yours very truly,

G. L. Leib
Vice President

COMMITTEE ON PUBLIC INFORMATION
GEORGE C. REED, CHAIRMAN
THE SECRETARY OF STATE
THE SECRETARY OF THE TREASURY
THE SECRETARY OF THE NAVY

SERVICE BUREAU:
F. W. McREYNOLDS
DIRECTOR

INFORMATION AVAILABLE AS TO
OFFICIALS, FUNCTION, AND
LOCATION OF ALL GOVERNMENT
DEPARTMENTS

SERVICE BUREAU
CORNER FIFTEENTH AND G STREETS
WASHINGTON, D.C.

May 1, 1918.

Mr. Thomas A. Edison,
President, Naval Consulting Board,
Washington, D.C.

5126

Dear Sir:

The Service Bureau (created by Executive Order of March 19, 1918) of the Committee on Public Information, has opened an office at 15th and G Street, N. W., in the rooms formerly occupied by the uptown ticket offices of the Pennsylvania Railroad.

This Bureau maintains an up-to-date card index directory of all Government Departments, covering officials, function and location. It serves as a source of information for all men coming to Washington in connection with Government business; for all Government Officials; and, as far as possible, as an inter-department clearing house.

We desire to serve all Government Departments in every way possible, and will be glad to have you refer to us, whenever you are in doubt as to their proper destination, all parties coming to you on Government business other than that belonging to your Department; and to forward to us all letters of inquiry regarding Government business, which do not belong in your Department, and about the routing of which there is uncertainty.

Very truly yours,

F. W. McReynolds,
Director, Service Bureau.

Mr. Edison: This looks like a very good thing and ought to be helpful. For instance, the letter of Hon. W. B. Walton (attached) might be referred to this Bureau for transmission to the proper official. Meanwhile,

Form 244

WESTERN UNION

TELEGRAM

GEORGE W. E. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

BELVIDERE BROOKS, VICE-PRESIDENT

| | | |
|----------------|------------|-------|
| RECEIVER'S No. | TIME FILED | CHECK |
|----------------|------------|-------|

SEND the following Telegram, subject to the terms
on back hereof, which are hereby agreed to

Key West, Fla., May 2, 1918.

Thos. A. Edison,
Orange, N.J.

*Use your own discretion
about motion pictures
Edison*

Do you think it advisable to
bring motion pictures North and develop them, making
absolutely sure they are all O.K. before disturbing
apparatus here. McChesney knows place to develop
secretly. Work will take two days. Can arrange so
that work here will not be interrupted.

S. G. WARNER.

H

May 2, 1918.

4 P.M.

Mr. John Hanley,
671 Hunterton Street,
Newark, N.J.

Dear Mr. Hanley:

Instead of going to New London tomorrow, will you please take the train tonight from Grand Central Depot leaving at 11:45 P.M., which will arrive at New London at 3:15 tomorrow morning. Go to the Hotel Mohican and you will find that a room has been engaged for you by Dr. Hutchinson. Mr. Edison wishes you to report to Dr. Hutchinson at the Hotel early tomorrow morning.

If you take a sleeper, you can go to the Grand Central at 10:00 o'clock and go to bed if you want to.

The train goes on to Boston, so you had better arrange to have the Porter call you so that you can get out at New London.

Yours very truly,

W.H. Leeson, Jr.
Assistant to Mr. Edison.

Cy to Bldg. 4, Laboratory.

2007-18418

TELEGRAM

Regular CHECK
Night Letter WHICH
Day Letter

Via

Western Union

Company Date 191
Time *10:28 a.m.*

Orange, 5/3/18.

S. G. Warner,
U S Naval Station,
Key West, Fla.

Use your own discretion about

Motion Pictures.

Edison.

Sent by HAC

**NAVAL CONSULTING BOARD
OF THE UNITED STATES**

THOMAS A. EDISON, PRESIDENT.
WILLIAM L. SAUNDERS, VICE PRESIDENT.
BENJAMIN D. THAYER, VICE PRESIDENT.
THOMAS ROBINS, SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

MAY 3 1918

To the Members of the Naval Consulting Board:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
MAY 11 1918 in the Carnegie Institution, Wash-
ington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS,
Secretary,
NAVAL CONSULTING BOARD.

Per *gms*

Vessel S. C. 19 Apparatus MB 5 tube.

Date May 5, 1918.

Test No. 1

Sheet No. 1

TIME OBSERVER J. Hanley.

H. M. S.

- 10 53 15 Hear Submarine motor started.
54 30 Sounds as though another motor was started.
54 45 Same as at 10 53 15.
55 45 There seems to be an occasional knock.
56 20 Noticed great variation in intensity.
57 20 R. P. M. 138.
59 00 Very plain
11 -- 10 R. P. M. 132 Dying down in intensity.
11 3 15 R. P. M. 138
4 15 Getting faint.
7 30 R. P. M. 144.
8 5 } People walking on deck, lot of noise which interfered.
9 50 }
12 50 Lost
13 Picked up again by adjusting. Seems to be very plain now
R. P. M. 132.
14 35 Apparatus very sensitive to direction. Sound diminishes
at 10 shift of the instrument.
18 20 R. P. M. 140
20 30 Lost.
24 10 Hear again very plain by adjusting instrument.
26 Lost again. Searching all around scale.
11 28 40 Hear slight roar, but cannot count the R. P. M. Distinguishing qualities lost.
- 32 min
4107 fm

Listening apparatus installed on submarine chaser No. 19. (110 ft. wooden boat)

Chaser remained still.

Submarine G 2 was instructed to run from Chaser in a straight course at a speed of 4 knots per hour.

(Speed of G 2 submerged is 10 knots at 360 R.P.M. of motors)

Calculated R. P. M. at 4 knots should be 144)

Weather fairly calm.

Apparatus was very quiet until submarine motors started. At first there seemed to be a number of motors running which made a very confusing noise, but the sound got more uniform and periodic "Apparently" when Submarine got under way.

At times the intensity would die down for a brief period.

Can't explain the reason for this variation in intensity.

The apparatus was very sensitive to direction, a movement of 10° on scale would diminish sound considerable.

People walking on deck directly over apparatus would interfere at times.

There was also an occasional hissing sound in right ear-tube, due probably to some fault in the tube or button construction.

At times would lose sound, but by adjusting instrument would pick it up again at another bearing.

The Chaser being free to drift in any direction accounts for this bearing change.

The character of the submarine noise consists of three distinct beats to the revolution. One beat being of greater intensity and of longer duration than the other two.

The predominant beat is accompanied occasionally by a sort of a

glub, or big water bubble noise.

After listening 45' 25" could just hear the predominant beat which died down to a slight cough and finally turned into a steady roar. RPM could no longer be counted.

Hearing time was 45' 25".

Average R. P. M. Counted was 137-1/3.

Calculated distance submarine could be heard was 2. 89 nautical miles, or 3.32 statute miles, or 5860 yards.

Calculated speed of Submarine was 3.81 knots per hour, or 386.8 ft. per minute.

$\text{Na}_2\text{NO}_3 \cdot \text{CO}_2$

Na_2NO_3

Na OFF
 Na OFF

$\text{C.} 92$

NO

WIMMIL



Vessel S. C. 19 Apparatus MB 5 tube

Date May 5, 1918. Test No. 2. Sheet No. 1.

TIME OBSERVER J. Hanley.

H. M. S.

- 12 42 30 Hear engine running. Also hear noise like a horn blowing.
44 30 Great variation in intensity.
46 20 More uniform now. R. P. M. 140
47 Hear a steady roar in ear tubes.
47 30 Submarine is very plain now and the roar is lost.
48 15 R. P. M. 132
50 Hear horn blowing again.
52 30 Character of submarine noise same as in test No. 1. Rolling
of S. C. 19 gives a lot of water noises in instrument.
55 R. P. M. 132.
59 10 Water bubbling noise in ear tubes interferes, also the water
washing against side of boat.
1 1 30 Lost through other shipping interferences. Can't count R.P.M.
nor distinguish from other boats.

This test same as Test No. 1, submarine running awash instead
of submerged.

No noticeable difference in character of sound.

Notice great variation in intensity when submarine was close.
The sea was quite rough while this test was going on. There
was quite an interference due to the rolling of the Chaser,
and also the waves slapping against the sides.

There was also a hissing and bubbling noise in eartubes.

The Submarine could only be heard in the lull periods.

The horn that was heard was some sort of signal on the
Destroyer Jouett.

-2-

After listening 19 minutes, could not count R. P. M. nor distinguish submarine from other boats.

Hearing time was 19 minutes.

Average R. P. M. counted was 134-2/3.

Calculated speed of submarine was 3.68 knots per hour or 372.9 ft. per minute.

Calculated distance submarine could be heard was 1.16 knots or 2350.93 yards.

RECEIPT FOR REGISTERED ARTICLE
Registered at the Post Office Indicated In Postcard

No. 24144

Class postage

Complete record of registered mail is kept
at the post office, but the sender should write
the name of the addressee on back hereof
as identification. Preserve and submit this
receipt in case of inquiry.

POSTMASTER,

44-4442

Post Card

May 6, 1918.

Mr. J. J. Butler,
c/o General Board Room,
Navy Annex,
Washington, D. C.

My dear Mr. Butler:

I am enclosing, herewith a letter
for the Secretary of War. It contains some confidential
matter, and Mr. Edison does not want it to go through
the regular channels, but would like to have you go
over and hand it to Mr. Baker personally, if possible,
or if not possible, please give it to his Assistant.

I am also enclosing a letter to Secretary
Daniels. This is also very confidential, and Mr.
Edison would like you to hand it to Mr. Daniels only
in person, and not to anyone else.

Let me thank you in advance, in behalf of
Mr. Edison.

With kindest regards, I remain,

Yours sincerely,

[ATTACHMENT/ENCLOSURE]

May 6, 1918.

My dear Mr. Daniels;

I was out all day yesterday with sub-marines, chasers and torpedo boats and made all the proper experiments. So I can now give you accurate information unaccompanied by exaggeration.

Any time you want me to come down I will do so, but would request that you and I only be present at our interview.

Yours sincerely,

P.S. I have arranged that this letter shall be delivered to you in person.

[ATTACHMENT/ENCLOSURE]

Zecy D.

I Was out all day ^{yesterday} with ~~Seaborn~~,
Chasers & Torpedo Boats,
~~I made~~ ^{out} ~~the~~ proper Experiments,
So I can ^{now} give you accurate
information unaccompanied
by Exaggeration & anything
that you want me to come
down, I will do so, but
would request that
you only be present
at our interview.

S

P.S. I have arranged that this letter
shall be delivered to you in person.

J. S. BACHE & CO.
42 BROADWAY

Chesler

NEW YORK May 6 1918.

Mr Thomas A Edison,
West Orange , N.J.

*Day just now
have less men & can use*

Dear Sir:

My name is Arthur M Chesler, a brother to Harry Chesler.

I am at present working for the above named firm but I would like to take a position as my brother did . I have two years training in the electrical and scientific course and went to the hebrew technical institute. I am ambitious and until recently received my discharge from the united States Army for minority, after I have been in one year. Will you please give me a chance as you did to my brother, and in a very short time I can prove my worth to you. I have a knowledge of geometry, metal spinning, electrical experiments and I would need but a month practice to regaine to my mind the things I have studied so long ago.

May I have the honor to hear from you in the near future and perhaps have an interview with you some Saturday afternoon if convienent for you.

Hoping that you give this application a little consideration , I am, Sir

yours very truly,

Arthur M Chesler

amc,gd

5116

8

Nahant, Mass., May 6, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

Dear Mr. Edison:

Based on the knowledge we now have regarding capabilities of detection devices and the conditions of submarine operation in European Waters, there is no doubt but that if America will produce and equip an adequate number of suitable submarine chasers the menace from the submarines can be reduced to a negligible value and the future safety of America's interests on the sea insured. It is my opinion that suitable chasers should have the following characteristics:

SHIP: About 200 feet long, strongly built to withstand depth charges, sea worthy, 22 knot speed, free from unnecessarily noisy projecting stern or strakes, provided with quickly operating and quiet running anchor gear, all auxiliaries capable of being instantly silenced, boiler and power plant laid out for quick stopping and starting also to permit getting under way at full speed in minimum time on short notice after hours of drifting, main engines to make minimum possible noise while under way at all speeds.

ARMAMENT: Two guns to equal or outrange those on the submarines but small enough to permit training from a vessel of this

size; machine guns; at least twenty 300 lb. or heavier depth charges with suitable projectors, and a depth charge thrower with a range of one thousand yards for 100 lbs. of T.N.T.

DETECTION DEVICES: Must be suitable for running, drifting and anchored patrols, as well as for the chase; the best forms of attached to the hull devices, overboard drifter sets, towing listening devices, and towing contact devices should be adopted; existing devices, completely developed, adequate for this work are now available. Future developments will be in the nature of refinements and improvements and it is unnecessary to consider them before undertaking this chaser program.

COMMUNICATION: Wireless telephone (5 miles radius), Wireless telegraph (100 miles radius), special shapes, direction and range indicators, truck lights, search-lights with signal shutter, speaking tubes for communicating between devices, plotting room and bridge; secret recognition signalling devices, ranging devices to permit the location of any ships in the tactical group to be determined by the other ships, during all weather conditions of day and night are essential.

PERSONNEL: The actual destruction of a submarine requires quick, snappy action and too much emphasis cannot be placed on the necessity of a high grade, trained crew, preferably

commanded by a regular Navy officer of destroyer training, with a second in command known as a hydrophone officer who will be responsible for listening under chasing conditions and responsible for the decisions reached from the listening results obtained.

- Comments on Chaser Characteristics -

There is no reason to believe that if the Navy Department decides to proceed and an adequate number of ships, which as you know should be at least a total of 350, are produced there will be little difficulty in filling any of the conditions outlined above with the exception of that of the speed of the chasers. A minimum of 22 knots is essential for the following reasons:

The most frequent contacts with enemy submarines may be anticipated at night while the chasing patrol is lying drifting and sound contact obtained with an approaching submarine which is either bound to or from its base of operations, or toward a light to locate itself accurately before going onto a ship lane. There are German submarines now, according to the best knowledge available, having a surface speed of 17 knots and others about to be put in service with a surface speed of 20 knots. Since it is necessary for a chasing boat to either slow down or entirely stop to listen, and since these slow downs or stops must be made at relatively frequent intervals, an excess speed over the pursued boat is absolutely necessary.

We in Captain Leigh's Party ourselves experienced two

instances of submarines operating at perhaps 16 knots leaving our 10 knot trawlers and the helpless, disheartening feeling under these circumstances can be better imagined than expressed. It is obvious that any speed less than that of the pursued submarine will result in a similar condition. Roughly, in my opinion 80% of the contacts with enemy submarines will occur while the submarines are on the surface at night and under these conditions it is my firm belief that the number of times the chasing boats can close up on the submarine after once starting a chase will be about as follows:

| | | |
|--------------|---|--------|
| 18 knot boat | - | 10% |
| 20 " | " | - 60% |
| 22 " | " | - 100% |

If we had 18 knot ships a year ago they would have done good service, but if we are now to build ships for chasing submarines it would be extremely unwise not to anticipate the future developments of the German submarine which undoubtedly will be in the direction of higher speed. Twenty-two knots is really not the minimum that should be considered on boats/already started and higher speeds would be better if obtainable. In addition to the imperative need of speed to overtake a submarine running on the surface there are the incidental advantages of - first, more quickly getting to the point where a submarine has been reported thereby increasing the chances of obtaining sound contact with it and, second, the chance that a submarine seen on the surface during the late hours of the day can be overhauled

- 5 -

and made to submerge before dark. Having once compelled a submarine to submerge the chances of destroying it are greatly increased.

It would be unwise to slow up or change the Ford program but each succeeding lot of ships should certainly have incorporated in their design all the requirements found essential by those in closest contact with the anti-submarine work.

If we can supply you with any more specific information or be of use in any way in furthering the chaser program, please feel perfectly free to call upon us. I am enclosing quotations from two letters from Mr. Scott in London which give a little side light on the Admiralty's position and the possibilities of the devices. It should be born in mind that the probable sinking of a submarine by our party, and by the three boats referred to in Mr. Scott's letter are I believe the initial instances where three chasing boats started out with the intention of hunting and getting a submarine and were successful. This is a radical advance over the destruction of submarines by accidental contact of destroyers, etc, and if carried out on a considerable scale should have a tremendous influence on the morale of the German submarine crews.

Very truly yours,

C. E. Eveleth.

CEE/C.

Quotation from letter from C. F. Scott to C. E. Eveleth,
dated London, April 3, 1918.

"The fourth Hunting Patrol Unit claim to have destroyed
an enemy submarine off Portland on March 13th, and the
Admiralty are investigating the claim. The unit was equipped
with S.C. C-Tubes (now called Inboard C-Tubes) and Nash Fishes,
and was making a running and stopping patrol. At 5.00 a.m.
they took in the fish on H.M.T. JOHN CASEWELL, and the "C" tube
listener went on his watch, and on the very next stop, he heard
the sound of a submarine propeller. The listener with whom I
later talked, said that he gave the Commanding Officer a bearing
of 120°, and about 700 yards distance. The trawler's course was
changed, the distance run, and on the next stop, he obtained the
sound at 10°. The other two trawlers had been advised that
sound contact had been obtained with a submarine, and they were
then able to give cross bearings with the Fishes, which permitted
one trawler to drop depth charges over the spot while the two
other trawlers, which had given the bearings, projected depth
charges over the same spot. Great quantities of oil came up
and later trawling cables met with obstruction at this spot.
I have talked with all three Captains of these three trawlers,
and they seem to feel that they did destroy the submarine".

"INBOARD C TUBES. A total of approximately 30 trawlers
have been equipped with this type of tube".

Quotation from letter from C. F. Scott to Dr. W.R.Whitney
dated London, April 7, 1918.

"As to the question of 200 ft. chasers. The composite impression which I have formed from talks with British Officers at the Admiralty and our own Navy people, is that a 200 ft. chaser built to stay out in any sea, properly gunned, with a speed of, let us say, 20 to 22 knots, and to readily silence all auxiliaries whenever the engines are shut down for listening purposes, would fill a gap which no allied craft today can fill. The little 110 ft. chasers now being sent over are distinctly fair weather ships, and from discussions I have heard among our Navy people, they do not feel that ships of this type can be called upon to stay out from their bases for more than four days. One day steaming to their patrol area, two days patrolling, and one day returning to their base. They feel that not only will the personnel not be able to stay out longer, due to cramped quarters, etc., but that the ships themselves are going to pound themselves to pieces unless they are handled rather gently."

"As to what devices the 200 ft. chasers would carry is rather difficult to state and will depend entirely on the developments that may crystallize in the next two or three months".

"The Admiralty state definite preference for a listening device which is part of the ship, gives direction, and which could be repaired and maintained without docking the ship. Failing that, a towing device, rugged in construction, which can be used while ship still has headway after engines have been shut down. The higher the coasting speed at which good listening is possible, the better, especially is this true where devices are considered for 22 knot vessels".

PLEASE REPLY TO
SALES
DEPARTMENT

PATTON PAINT COMPANY
SOLE MAKERS
PATTON'S SUN-PROOF PAINTS
MADE IN U.S.A.
NEWARK, NEW JERSEY.

CABLE ADDRESS:
"SUNPROOF"
WESTERN UNION
LIEBERS
A.B.C. 4TH & 5TH ED.

Day I turned it over
May 7th 1918
Thos. A. Edison, Inc., the Aerial Bureau at
West Orange, N. J. Key West to try it -
Attention: Mr. W. H. Meadowcroft.

Gentlemen:

You will doubtless recall that on February 9th you requested us to ship Mr. Edison, c/o The Commandant, U. S. Naval Station, Keywest, Florida sample of the Fireproof Paint as used at Silver Lake. Since that time we have heard nothing regarding these samples, except your letter of March 11th, and we were wondering whether Mr. Edison could give us any advices on the subject at this time as to results of the experiment, and whether it is possible to take the matter up direct with the Government ourselves.

Yours truly,

W. A. Buckley
SALES MANAGER.

5142

May 7, 1910.

Mr. Preston S. Miller,
General Manager, Electrical Testing Laboratories,
80th Street and East End Ave.,
New York, N.Y.

My dear Mr. Miller:

Please pardon the delay in replying
to your favor of the 1st instant. I have consulted
Mr. Edison on the subject of paying from his fund the
amount you mention as having cost you by way of direct
labor and expense, namely \$324.29. He wishes me to
say that if you will kindly send a bill for the amount
we will forward you a check in payment. You can
make your bill against Thomas A. Edison, Laboratory.

M. Edison appreciates greatly your kind
and prompt cooperation with him in the work for the
Government, both on Long Island and Key West.

Yours very truly,

Assistant to Mr. Edison.

A/LL3.

2007-136418

TELEGRAM

Regular
Night Letter CHECK WHICH
Day Letter

Via Western Union

Company Date 5/8/18. 191
Time 10:40 A.

Hon. Josephus Daniels,
Secretary of Navy,
Washington, D. C.

Letter received. Will be down tomorrow.

THOS.A.EDISON.

*Henry Ford,
Detroit*

Mar
8th
1918

Mr Wm H Meadowcroft
Assistant to Mr Edison
Orange, N J.

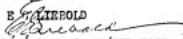
My dear Mr Meadowcroft:

Your letter of February 23rd received, from which I note that you have asked Mr Aaron Hill of Los Angeles, Calif., to send Mr Ford a catalog and description of the Hill Gang Drill.

Up to the present time this has not arrived but we are anxiously awaiting same at which time it will be brought to Mr Ford's attention.

With kind regards, I am

Very truly yours


E. F. KIERBOLD
General Secretary to HENRY FORD

ECL F

May 9, 1918.

My dear Mr. Secretary:-

I was very much pleased that you should have gone to New London submarine base and witnessed the actual locating of a submarine running submerged and in an unknown direction; also that you have afforded really ample facilities to the various scientific men to work out the problem, and have given the younger officers of the Navy, like Hepburn, McDowell and Libby, a chance to show what they can do. After you returned I went out all next day with the boats and verified certain details not carried out in the test conducted in your presence.

My opinion is that if you back up these young officers and scientific men, give them the kind of boats they want, and do it quick, that the submarine will be reduced from a serious menace to a minor annoyance.

Yours sincerely,

(Sgd) *Thos. G. Edison.*

Hon. Josephus Daniels,
Secretary of the Navy.

GENERAL ELECTRIC COMPANY
120 BROADWAY, NEW YORK
PRESIDENT'S OFFICE

*Acting President says that
of War reported very
favorable for the
United States of America*
New York, N.Y., May 9th, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

Dear Mr. Edison:-

I have copy of Mr. C. E. Eveleth's } attached.
letter to you dated May 6th, with enclosures. } W.H.R.

I cannot add anything to his
clear presentation of the situation.

I have been convinced for many
months of the vital importance of securing recogni-
tion, by our Government, of the importance of the
program which is briefly outlined by Mr. Eveleth.
I have interested myself in helping to forward this
program.

I would be greatly interested to
learn whether you believe that we are on the right
track.

Very sincerely yours,
EWR/p.

E.W. Rice Jr.

May 10, 1918:

Mr. Arthur M. Chesler,
c/o J. C. Buche & Co.,
42 Broadway,
New York, N.Y.

Dear Sir:-

I have received your letter of the 6th instant, and regret to say that I shall not be able to offer you a position at this time, as I have all the men that I can use at present.

Yours very truly,

A/5116.

MAY 10, 1918.

Mr. F. L. McWaynolds, Director,
Service Bureau,
Fifteenth and G Streets,
Washington, D. C.

Dear Sir:-

Your favor of the 1st instant to Mr. Edison was received and shown to him. He thinks that your Bureau is very desirable and should be quite useful to the Government.

We expect to communicate with you from time to time and avail ourselves of your services.

As a starter, we forward you, herewith, a letter from Hon. W. B. Walton of the House of Representatives, with which he sends a copy of a letter from Mr. J. L. Gibbons of Roswell, New Mexico, asking information relative to enlisting in the ship building branch of the U. S. Army. Will you kindly forward this letter to the proper Government official.

Yours very truly,

Assistant to Mr. Edison;

A/5126.

Enclosures.

MSS Sachem
May 10/18

My dear Mr Meadocroft

Will you please see
if you can get in touch with
Colonial Burd, and get some
action on our affairs. Things are
very slow here, I will appreciate
it very much. - would leave

Very much I would leave
pleased you are this but I have
been sick in bed, worse to
be out in a day or two.
Give my regards to
every body - Very truly.

Very Truly.

François.

John Stanton Island Shipbuilding Co.

May 11, 1918.

Captain Warren S. Harris,
c/o U. S. Sachem, S. P. 192,
c/o Staten Island Ship Building Co.,
West Brighton, S. I., N.Y.

My dear Captain Harris:

I am very sorry, indeed, to learn from your note of yesterday that you have been and still are on the sick list. I trust that your illness will only be temporary, and that within a few days you will be feeling as fit as usual.

I called up Admiral Burd, but found that he was away at New London. I spoke to his Assistant, whom I know, and asked him if he would not have some action put into your repair. He said he would attend to it right away, and I trust the result will be satisfactory.

All hands wish to be remembered to you very kindly and send you their best wishes. Please count me in on the whole thing.

Yours sincerely,

Assistant to Mr. Edison.

A/6130.

May 11, 1918.

Mr. E. W. Rice, Jr.,
General Electric Company,
120 Broadway,
New York, N.Y.

Dear Mr. Rice:

I received your letter of May 5th,
and also Mr. C. E. Evelyn's letter of May 6th,
with enclosures.

You will be interested to learn that
I have reported very favorably to the Secretary of
the Navy on the latest developments at New London.

Yours sincerely,

A/5129.

May 13, 1918.

Patton Paint Co.,
 Newark, N.J.

Gentlemen: Attn: Mr. A. A. Buckley, Sales Manager:

I have shown to Mr. Edison your letter of May 7th, in regard to fireproof paint, of which you sent him a sample to Key West, Fla.

He wishes me to say, in reply, that he turns the sample over to the Aviation Section at Key West, suggesting that they give it a trial.

Possibly it might be well for you to communicate with the Commanding Officer of that section.

Yours very truly,

Assistant to Mr. Edison.

a/5142.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
Vice President.
BENJAMIN G. THAYER,
Secretary of Finance.
THOMAS RODING,
Secretary.

OFFICE OF
ANDREW L. RIKER
FAIRFIELD, CONNECTICUT

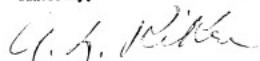
May 13, 1918

My dear Edison:

I regret not having had an opportunity of seeing you while at Washington last week, and am sending you herewith copy of a clipping which I cut from a newspaper a few days ago. It is barely possible you have seen it, but in case you have not, thought possibly you would be interested in reading the enclosure.

With kindest regards, I remain,

Sincerely,



[ATTACHMENT/ENCLOSURE]

May last, 1918.

THE KAISER'S PRAYER

Oh! Gott, will you be mine partner?
You don't know who I am?
Well, I'll tell you, Gott, I'm der Kaiser,
Der Emperor. Will i am,
You know I whipped der Belgians,
Und mit bullets filled Russias full.
Und I'll whip France and Italy,
Und blow up Chemny Buil.
Now fur all der odder nations
I don't gif a dam,
If you'll chust be mine partner,
Und whip dat Uncle Sam,
You know I got der Submarines,
All Europe knows dat well,
But Edison has a patent now,
Dat blows dat all to hell,
How Gott, if you will do dis,
Den you will i always lauf,
Und you in imperius above,
Und you in imperius above,
Fat, Gott, if you refuse me dis,
Tomorrow night at eleven,
I'll call mine zeppelins out,
Und declare war on Heaven,
I wouldn't ask dis of you,
But it plainly can be soon,
Dat wen Edison pushes dat button,
To Hell mit my submarine.

All communications should be addressed to "Division T, Office of the Chief of Ordnance, U. S. Army,
Sixth and B Streets NW, Washington, D. C."

WAR DEPARTMENT
DIVISION T MHH/FOH
OFFICE OF THE CHIEF OF ORDNANCE
NEW ARMY AND NAVY OFFICE BLDG.
SIXTH AND B STREETS NW.

WASHINGTON May 14, 1916.

In reply refer to No.
T

Mr. Thomas A. Edison,
Orange, N. J.

Dear Mr. Edison:

I note in the "Literature of Explosives" that in 1885 you proposed to electrolyze a solution of soda in a bomb and to use the electrolytic gas as an explosive.

Will you be good enough to let me know if you considered such work successful? If not, I would appreciate your letting me know why you abandoned further experiment. Any data which you may let me have at the present time will be of interest to the Explosive Branch of the Engineering Bureau of the War Department.

Faithfully yours,

Nevil Monroe Hopkins

NEVIL MONROE HOPKINS
Major, Ordnance R. C.

*Knew
How much explosive force
Can be kept from
explosion*

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT,
WILLIAM L. SAUNDERS,
VICE PRESIDENT,
BENJAMIN D. THAYER,
VICE CHAIRMAN,
THOMAS ROBIN,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

May 14, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

Mr. Saunders has today sent the following letter to
Secretary Daniels:

Hon. Josephus Daniels,
Secretary of the Navy,
Washington, D. C.

My dear Mr. Secretary:

The Naval Consulting Board would appreciate the opportunity of visiting New London as a body in order that all of its members, some of whom have not been there, may make certain observations upon anti-submarine devices in practical operation.

In view of the urgency of this matter, may I request, if you are agreeable to this plan, that orders be issued so that the Board may make its observations beginning not later than Monday, May the 20th?

Respectfully yours,
(signed) W.L.Saunders
Chairman, Naval Consulting Board.

As the Secretary will probably agree to this plan I would suggest your advising me at once by telephone if you would be able to spend Monday at New London, and if you would like me to engage for you a seat on the 5.10 train leaving New York Sunday afternoon and a room at the Mohican Hotel, New London, for Sunday night. It is hoped that the members would be able to leave New London on the 8 P.M. train for New York on Monday evening, reaching New York at 11.14.

Very truly yours,

Thomas Robins,
per G. C. T.

TR/gt

May 16, 1918.

Mr. A. L. Riker,
Fairfield, Conn.

My dear Mr. Riker:

I am sorry also to have missed
the opportunity of seeing you last week in Washington,
but possibly we may have better luck next time.

Thanks for the copy of the newspaper
clippings. I had already seen it, but it bears a
second reading.

Yours very truly,

A/4149.

May 17, 1918.

Major Nevil Monroe Hopkins, O. R. C.,
Office of the Chief of Ordnance,
Sixth and B Streets N.W.
Washington, D. C.

My dear Sir:-

Your letter of May 14th, 1918, is at hand.

I made only a few experiments, which were successful as far as they went.

If you use a bomb and produce gas to reach 2000 pounds per square inch thorium, the pressure will reach about 14 tons per square inch at against 60 tons for T. H. G. If you want to equal T. H. G. the pressure in bomb must reach about 9000 pounds per square inch. About 75 grammes of electrolyte per litre will give 2000 pounds per square inch.

Yours very truly,

A.

[ATTACHMENT/ENCLOSURE]

Major Nevil Monroe Hopkins, Esq.
RE

Yours of May 14 1918 ^{is at hand}

I only made a few experiments, which were successful as far as they went, ~~etc.~~

If you use a bomb and produce gas to reach 2000 lbs per square in, ^{inch} Bomb, the pressure will reach about 14 tons per sq in
such as against 60 tons for TNT. If you want to equal TNT the pressure in bomb must exceed about goods per square in, About 75 grains of Electrolytic ^{per} lime will give 2000 lbs per sq in

[ATTACHMENT/ENCLOSURE]

[By W.H.Kinserm]

May 17-196

Theoretically, an explosion of a mixture of hydrogen and oxygen will produce a pressure 14 times as great as the original pressure when the gases are confined in a chamber.

that is -

| | |
|------------------------------------|--------------------------------------|
| Starting with 14.7 lbs pressure | Resultant pressure 205 lbs./sq in |
| 1 ton per sq in | 14 tons per sq in. |

T.N.T. will give pressures of 60-70 tons per sq in.

To do as good as this with a mixture of hydrogen and oxygen requires an original pressure in the bomb or chamber of 4.3 to 5 tons per sq. in.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON, PRESIDENT,
WILLIAM L. BRIDGEPORT, CHAIRMAN,
BENJAMIN D. THAYER, VICE CHAIRMAN,
THOMAS ROBINSON, SECRETARY.

OFFICE OF
ANDREW L. RIKER
FAIRFIELD, CONNECTICUT

May 17, 1918

W
My dear Mr. Edison:

I have your favor of the 16th inst., and while I felt you had probably seen the copy of newspaper clipping which I forwarded to you, yet I thought it might possibly have escaped your attention.

I hope to have the pleasure of seeing you sometime in the near future, and if you are ever in the vicinity of Bridgeport, would appreciate a call from you, if you can spare the time.

Sincerely yours,

A. L. Riker

**NAVAL CONSULTING BOARD
OF THE UNITED STATES**

THOMAS A. EDISON,
VICE CHAIRMAN;
WILLIAM L. SAUNDERS,
SECRETARY;
BENJAMIN D. THAYER,
VICE CHAIRMAN;
THOMAS ROINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

h
MAY 20 1918

To the Members of the Naval Consulting Board:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
MAY 25 1918 in the Carnegie Institution, Wash-
ington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROINS,

Secretary,
NAVAL CONSULTING BOARD.

Per S.

Oyster Bay, N.Y., 5/22/1918.

My dear Mr. Meadowcroft:

Notwithstanding a heavy down pour of rain, I have made considerable headway today. Got in touch early this A. M. with Mr. Raymond Smith. Made his acquaintance at the Red Cross meeting last night and made an engagement with him for 9 A. M. today. He took me in his automobile to the different places hereinafter mentioned. He was undoubtedly the man for me to see and has all the details of Long Island property at his fingers end. First - He tells me that the Center Island property is out of the question.

No one over there would sell to any Industrial Enterprise - that it is strictly a residential proposition and everything else is barred and any purchaser would be subject to the consent of the other owners. I am going to inclose one of his maps and you can see the full names of the owners printed on the map. Without the element of Commandeering by the Government, this property would be practically impossible.

Second: The flat ground between the Sound and Bay which Mr. Edison saw between the two old wrecks and near the Ferry to Greenwich, Conn., belongs to the Jones family who own a lot of property on Long Island and in and around New York and they are very hard to do any business with. Unreasonable in price, and unreliable to do business with. Mr. Smith said they would want a million dollars for their holding of from 50 to 75 acres. This land is from 700 to 800 feet back from the Channel of the Bay and considerable dredging would have to be done to get boats with any draught to it on the Bay Side. Deep water 27 or 28 feet on the Sound Side is closer and could be reached with a dock. Large boats come in very close on the Sound Side and the Greenwich Ferry comes in right at the end of it. He could give me no approximate price on this property and said that the owners were simply impossible. If any commandeering is to be done I should judge that these are the people who deserve to get it. He thought they might agree to a ground rent proposition, but they never sold if they could help it. I might also mention that they also own most of the property along Eaton's Neck where we saw them taking out sand for New York, up beyond Northport.

Third: Next to the Jones property on the left as you drive in from the main road there is what they call "The Pines" - about 3 acres all told, fronting on the Sound same as the Jones property and bordering on the main road. There are 5 lots with two properties (houses) next to this he thought could be had for \$5000 and about 10 lots with three houses at approximately \$20,000. The lots are 50 by 100 ft. and are adjoining to the 3 ~~acres~~ acres above mentioned. He thought this 3 acre (The Pines) could be had for \$11,000 or perhaps less - and perhaps the whole plot 3 ~~acres~~ acres and 15 lots could be had for about \$36,000.

Fourth: The Brown property at Bayville (see Map): This consists of two plots one of 90 acres and one of 30 acres both facing on the Northwest arm of the Bay and shut in by a drawbridge. The 90 acres has a fine house on it. In front is flat and level and runs gradually back to high ground at the back to the main road. The thirty acres faces the N. W. arm of the Bay and runs back to the road. Of course, considerable digging out would have to be done to get boats of any size into the arm of the Bay, and there is the drawbridge (opening 48 feet on each side) to contend with. This bridge is just three miles from the Oyster Bay depot.

→ thought that perhaps ~~xxxxxxxxxx~~ "The Pines" property and either one or both the Brown properties, taken together, might give sufficient room for the needs. While they are not adjoining they are close together and connected by the main road. The Pines property would give the Sound water front and the Brown property give the necessary room for the housing part of the proposition. There are very few, if any, houses to be had in Oyster Bay proper, and with no trolley lines, the housing proposition would have to be taken care of as a part of the general scheme. There is other land beyond the Brown place that could be bought if more land is desired. Mr. Smith said he thought the Brown property would cost from \$2000 to \$2500 per acre, but if Mr. Brown could sell all his holdings there he might take less. Said Brown had been disappointed in the support given him to build up a fine residential property and had remarked that he "wished he had never seen it" and thought Brown would be glad to get out for what it had cost him. Could not say how much that was. Of course this Brown property, The Pines, and the Jones property are all over three miles from the Railroad, Oyster Bay being the Ry. Station. The roads, of course, are fine. We drove over them. Mr. Smith says the ice conditions in the Bay were very unusual last Winter and that usually navigation is only interrupted for 30 to 45 days in Winter. The Channel has never been known to shift. The tide in the Bay has a rise of 7 feet. Average rents in Oyster Bay where there are any for rent, 5 or 6 rooms with modern improvements, Heat and Bath, is about 20 to \$25. Top notch 8 or 9 rooms, \$40 to 45 dollars. Anything higher there is little or no use trying to rent. There are, however, very few vacant houses of any kind to rent. Water is fine and general health excellent. Market for provisions are excellent. The Ferry to Greenwich runs three or four trips per day - 10 or 12 miles - fare about 30 cents. Oyster Bay is 30 miles from New York. The cottages and shacks on the neck of land running out to the Center Island belongs to the town and not for sale. There is one lot of 20 acres on Center Island for sale, but only for residential purposes. Have marked it on map. Held at \$4000 per acre.

Fifth: Property at Glenwood Landing on Hempstead Harbor. This is a property belonging to a cousin of Mr. Smith and he suggested that we drive over and see it. We did so. This is considerably nearer New York. About 20 miles to New York. There are 60 acres on the main road and adjoining the Railroad a short distance south of Glen Head Station. - 40 acres on the corner suitable

for housing or Laboratory purposes, and 15 acres on the Shore of Hempstead Harbor, with about 300 feet of water front. An old dock and a good channel. U. S. chart ~~map~~ shows 13 to 18 feet depth. This property can be bought for \$2000 per acre on the water and about \$1500 on the road. Stern, the Dry Goods man of New York, has the property in between. The property is known as the Estate of George W. Townsend. There is a large power house on the adjoining property Nassau Electric Light Co. Supplies light to much of Long Island. Across the Harbor are the sand beds the largest on the sound, they say. Boats (tugs and scows) go in and out for New York - 18 to 20 miles away. These properties are not connected except by roadway, but might serve the purpose if properly arranged. Would have water front nearer New York and a lot of 30 acres along side the railroad and just across the main drive a lot of 30 acres more and 40 on the corner, making with the water front 115 acres. The upland 100 acres is beautifully located. → Mr. Smith has another piece of property right in the limits of The City of New York. If the proposition is not too expensive, it would be a great location from what I have heard of it. Of course, I have not seen it. It is known as The Zeraga Estate on "Old Ferry Point". It has 114 acres, 66 upland, 28 meadowland. Has one and one half miles of water front, one third of a mile being on the East River, minimum depth at bulkhead 30 feet. The Sound Steamers pass here very close. It is said to look almost like a stone's throw from the land. It is four miles from a Railway station on the Harlem Railroad. One and one-half miles from the 177th St. Trolley Station and Line to New York. It is South of West Chester, bounded on the West by Westchester Creek. The U. S. Chart shows well in shore 47 feet of water and mid channel 95 feet right opposite the Point. The property is held at \$550,000. Probably \$500,000 would buy it. It seems rather remarkable that such a piece of property so close to New York has not been taken up before this. It might be worth while for Mr. Edison to drive out there and look it over. Being so close to New York it would to some extent eliminate the housing part of the scheme. Unless there is some drawback, I do not know about, this looks good to me if the price is not prohibitive.

I saw Mr. Smith again and went over each proposition and finished today. The water at the Lighthouse is about 1/4 of a mile tide, channel about 300 feet. There was no mention of any price for the properties below \$1500 per acre and from that to \$4000 per acre according to location. Center Island from \$4000 up for residential purposes only. Mr. Smith will come to New York at any time to look at The Zeraga place, but presume Mr. Edison would prefer to go over it alone at first. Of course, I have mentioned no names to anyone here.

With best wishes, I am,

Sincerely yours,

(signed) Charles B. Hanford.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN D. THAYER,
VICE CHAIRMAN.
THOMAS ROBIN,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

May 22, 1918.

TO THE MEMBERS OF THE NAVAL CONSULTING BOARD:

Dear Sirs;

At the meeting of the Naval Consulting Board on Saturday please be present at nine o'clock in the morning, as all the members will be asked to sign an important report concerning our recent visit looking into the submarine situation.

Very truly yours,

W. L. Saunders,
Chairman,
per G.C.T.

WLS/gt

May 23d. 1918.

Mr. Edison visited The Jerafa Estate on Old Ferry Point this afternoon.

Leaving the shore edge of the property our Automobile Spontometer was set at zero. The Spontometer registered as follows:

| | |
|---|-------------|
| To Valley Line | 2 Miles |
| To West Chester | 3 " |
| " " Station | 4 " |
| " " Paquet Station | 5 " |
| " Elevator | 5 1/2 Miles |
| Dunmore Line | 6 Miles |
| Perry (30 ft. St. / Harbor Line) Fort Lee | 1 1/2 " |
| " Wayne | 3 1/2 " |

Charles B. Hanford

Mr. Raymond Smith details of
"The Grago Estate" on Old Ferry Point
in New York City.

114 Acres of 86 acres upland
28 " Marsh

1½ Miles of Water front.
½ a mile on the East River
Close to deep water.
Minimum depth at Rock Head line 30 feet.
Chamis depth 97 to 103 feet.
4 Miles from West Chatham Station Yonkers
1½ Miles to Dally Line (Borderline Line)
5 Miles to Elmont Station to New York.

Charles B. Grago

May 24, 1918.

Black Diamond Powder Co.,
Pittston, Pa.

Gentlemen:

Do you make ordinary Charcoal black powder?
If so, would you consider making a small batch of a
special form of black powder, say, 500 to 1000 pounds?
It is to be used in a Government experiment,
and if successful, they will want it in quantities.

Yours very truly,

P. S. Kindly address your reply to:

Attn: Mr. W. H. Hendowcroft.

[ATTACHMENT/ENCLOSURE]

Do you make ordinary
Charcoal black powder?

If so, would you consider
making a small
batch of a special
form of black powder,
It is to be used in a
government experiment
+ if successful they
will want it in quantities

May 26, 1918

L

Dear M^r Meadowcroft

Following the advice you gave me a few days ago over the telephone, I am now writing enclosing a letter for Mr Edison asking him to kindly write a letter of recommendation for me. I would have liked very much indeed to come out to Orange myself, but was unable to do so, as I had only a few hours to spend in New York, and had to return to Washington shortly after our conversation. — I am serving here in the Signal Corps, where I am engaged in writing technical literature on wireless communication, used for training purposes here and abroad. I expect to be given an application for commission in the near future, and a letter from Mr Edison, which I could enclose with my application, would be of great help to me in this connection.

Thanking you for this kind assistance in this matter,

I am, with best regards,

very truly yours

Henry Lauer.

U. S. Signal Corps
Land Division Training Section
1703 New York Avenue
Washington, D. C.

TELEGRAM

Regular
Night Letter CHICK
Day Letter WHICH

Via Postal Tel.

Company Date 191

Time 10:20 AM

May 27, 1918.

Ford Motor Car Co.,
Washington, D.C.

If special machine is all ready with
extra wheels and chain block, please put it in condition
to be driven to Orange in regular way with tractor wheels
removed. My man will go down and get it. Answer.

Thos. A. Edison.

Postal Tel. Co. ///
38 Ford Motor Car Co. Washington, D.C.

Edison X

Thos. A. Edison.

Cable Address "Edison, New York"

*From the Laboratory
of
Thomas A. Edison,*

EWYR COPY

Orange, N.J., May 17, 1918.

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D. C.

My dear Mr. Daniels:

For the last ten days I have been hunting for property near New York City, suitable for a Laboratory.

I have found three places which are very favorably situated, with very deep water near shore. Any one of them, even if not used for Laboratory, would make a cheap annex to the Brooklyn Navy Yard, being only an hour from the Yard by water. They are on the Sound.

I find that the further you go away from the suburbs of New York City, the more costly is the property as rich men are buying it up for estates and they do not want to be close to the City.

Any time you are ready, I will take you in an automobile, or we can go on a Navy boat, and you can inspect them. I think now is the best time to get property cheap as banks are not loaning money for speculative building, and property is not so much desired.

Yours sincerely,

(signed) Thos. A. Edison.

A.

[ATTACHMENT/ENCLOSURE]

Very Daniels -

for last 10 days have been hunting
for property near New York City, suitable
for laboratory -

- #1 Have found three places which are ^{very} favorably
situated, very deep water near shore.
Any one of them, even if not used for
laboratory, could make a
cheap annex to Brooklyn Nec.
Island being only a hour from
the yard. They are on the Sound, &
I find, the further you go away from
the suburbs of New York City the
more costly is the property as
Rich men are buying it up.

[ATTACHMENT/ENCLOSURE]

for Estates and they do not want to
be close to the City.
Any time you are driving, will
take you in automobile, or on
a Navy boat, & you can inspect
them. I think now is best time
to get property cheap as
banks are not loaning money
for speculative building &
property is not somewhat
desired —

S

H. W. TITMAN, PRESIDENT

Main Office PITTSSTON, PA.

H. C. HOOVER, SECRETARY

E. S. DRUMM, TREAS. & GEN. MGR.

Branch Office MAHANOY CITY, PA.



BLACK DIAMOND POWDER CO.

MANUFACTURERS OF

HIGH GRADE EXPLOSIVES

Mills at HAUCKS and SUSCON, PA.

Ship all goods for Haucks, Pa., to Black Diamond
Powder Co. Sliding for P. & R. R. delivery
Ship all goods for Suscon, Pa., to Black Diamond
Powder Co. Sliding for N.Y.S. & W.R.R. delivery

An Independent Company in no way
connected with a trust
BOTH PHONES

For prompt attention address reply to

Pittston, Pa., May 27/18.

Mr. W.H. Meadowcroft,

Laboratory of Thos. A. Edison,

Orange, N.J.

Dear Sir:-

Relying to yours of May 24th, would say, we manufacture
the common charcoal, sulphur and nitrate of Soda black powder,
and would be pleased to make the experiment you mention ~~as~~ if
any advantage to the government. But we doubt if our equipment
would be as satisfactory as some of the other mills. We are
equipped only for making the hand grained powder, which proves
very satisfactory for some work, but for other work is not as
satisfactory as the corning mill and pressed powder.

Our process is to pulverize the charcoal and sulphur
and then to mix and incorporate the sulphur, charcoal and soda
under 7 ton chacer wheels. We then grain it through sieves and
dry it at a temperature of about 200 degree Fahrenheit. It is
then run into glazed barrells and polished, either with or without
graphite. Eliminating the precessing process does not give quite
as hard a grain as when a hydraulic press is used.

If our process is satisfactory, we will be pleased
to hear from you.

Respectfully,

BLACK DIAMOND POWDER COMPANY,

E. S. Brumm
MGR.

Phone Plant:
Pittston R+2 (Bell)

Person Phone
E. B. 88mm.

Pittston 1049 J (Bell)

" 170 L. (Amalgamated)
Plant

Home address
180 Williamst

Pittston Pa

HENRY FORD, President
F. C. SCHAFFNER, Secretary
EDSEL B. FORD, Secretary

Ford Motor Company
Automobile Manufacturers

FACTORY AND GENERAL OFFICES
DETROIT



WASHINGTON, D. C.

Thos A Edison Inc
Orange
N J

May 28 1918

Naled 7/29

Dear Mr Edison:

ALL STATEMENTS OR AGREEMENTS CONTAINED IN THIS LETTER ARE COHESIVE ON STRIKES, ACCIDENTS, FIRES, OR ANY OTHER CAUSES BEHIND OUR CONTROL AND ALL CONTRACTS ARE SUBJECT TO APPROVAL BY THE SIGNATURE OF OUR AUTHORIZED EXECUTIVE OFFICER OF THIS COMPANY. CLERICAL ERRORS SUBJECT TO CORRECTION.

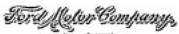
We are in receipt of your wire of May 27th which reads as follows:

"If special machine is all ready with extra wheels and chain block please put it in condition to be driven to Orange in regular way with tractor wheels removed My man will go down and get it Answer"

In this connection, would state that your man arrived here yesterday to drive experimental machine over the roads to your West Orange Laboratory, but am sorry to report that the machine on which the experiment was made was sold by us and the wheels and drums put in storage here.

During the winter time we equipped the machine with special body and the experimental wheels and took same over into Virginia for a test. We drove into a very muddy lane, which separated two plowed fields and after going in about 100 yards, the mud got worse and the machine stalled. The mud filled in the space between the cleats on the rear drums and gave us almost a smooth surface, consequently no traction and the wheels simply spun around. The front wheels, on account of the width of the drums pushed up the mud in such a manner as to prevent us from moving.

In our opinion, your idea should be rigged up to one of our ton trucks rather than our standard model "T" car, as the low gear ratio contained in the ton truck will give you the desired power. We also believe that the cleats on the drums should be about an inch wider. It would also be our recommendation that the drums on the front wheels be reduced to about one-half their present width, which would enable them to



Washington, D.C.

CONTINUING OUR LETTER OF 5-28-18

SHEET NO. 2

cut through the mud to some extent rather than hold you back, which they do in their present shape. We had intended to proceed with your experimental work as outlined before you went away, but Mr. Ford turned over our Building to the Government and we were consequently forced to locate in small temporary quarters, where we do not have the facilities or the help to carry on these experiments.

Your Chauffeur advised that he talked with you over telephone and explained the situation to you and that you requested that the experimental wheels and drums be shipped to you by Express to your Laboratory at West Orange. Please be advised that this equipment is going forward today and would suggest that as you are located near our Long Island City Assembly Plant, that you get in touch with them and feel sure that they will be glad to co-operate with you in this matter.

Regretting that we were unable to proceed with the experiment at this Branch, we are,

FORD MOTOR COMPANY

R. P. Jones
Manager

RPJ TFB

[ATTACHMENT/ENCLOSURE]

Form #10



Ford Motor Company

INVOICE
No. 8695

SOLD TO Edison Laboratories
West Orange
N. J.

ORDER DATE 5/28/18 101
DATE SHIPPED

CHARGE SAME

TERMS: STRICTLY NET CASH

CUSTOMER'S ORDER Verbal Shep. SHIPPED VIA

| QUANTITY ORDERED | PART NO. SHIPPED | ARTICLE | PRICE | AMOUNT |
|---------------------|------------------------|--------------------|-------|-----------|
| 4 | | Experimental drums | | NO CHARGE |
| 2 | 2814C | Rear wheels | | ** ** |
| 2 | 2800 | Front wheels | | ** ** |

INVOICE
TO BE HELD IN OFFICE UNTIL RETURN OF DRAFT
DATE, THEN TO CUSTOMER

IMPORTANT
Items back ordered are temporarily out of stock. Do not
re-order as we will ship as soon as our stock is replenished.

We, the undersigned, do hereby guarantee that
the articles or conveccities in and herin are
products of Ford Motor Company and are in accordance with
the Federal Trade Commission Act of September 1,
1914, and that the date of removal corresponds
to date of invoice above. Ford Motor Company,

May 29th, 1918

bill

ZIG-ZAG TARGET at Quarry, West Orange, N.J.

Present: Wolfe, Knierim and Hanford.

Fire at 200 feet. Vickers Machine Gun.

Experiment 1. At 200 feet, straight on, penetrated seven plates. Bullet seemed to split at 2d plate; two holes through the 3d plate; 2 holes in 4th plate.

Experiment 2. At angle 30 degrees to left, struck below No. 1 - penetrated five plates; 6th plate stopped ball. Seventh and eighth plate untouched. 2 holes in third and fourth plate.

Submitted by

Charles B. Hanford.

MR. MEADOWCROFT.

Lieut. Clark of the Navy Yard called up and
said:

They have a new system for Fire Control,
manufactured in the Brooklyn Navy Yard. Like to
have Mr. Edison come over, any day, and see it in
operation.

The Lieut. would like to get a call from you
letting him know just what Mr. Edison says about coming over.

May 29, 1918.

Telegarm

May 31/18

Black Diamond Powder Co
Pittston, Pa.

Mr. Edison leaves early
tomorrow Saturday morning by
automobile to see you about
powder. Probably arrive early
afternoon -

W. H. Meadowcroft

sent W.H. 5/31/18
5.35 p.m.

THE SECRETARY OF THE NAVY.

WASHINGTON.

May 31, 1918.

My dear Mr. Edison:

Thank you very much for your letter of May 27th. The first time I go to New York I will write you in advance so that we can take the matter up. I hope to be able to do so very soon.

Sincerely yours,

Franklin D. Roosevelt

Mr. Thomas A. Edison,
Orange, New Jersey.

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
June 1918**

June 3, 1918.

Harley, Davidson Motor Co.,
3800 Chestnut Street,
Milwaukee, Wis.

Gentlemen:

Possibly you may be aware of the fact that I have been engaged on special experiments for our Government for the last year and a half. In one of these experiments upon which I am now working, I would like to use one of the 16 H. P. power plants with transmission complete, such as you furnish with your motor cycles.

Would you be willing to furnish to me one of these power plants separately for use in this special Government work? It would be a great accomodation to the Government and to me.

If your answer is in the affirmative, will you kindly let me know the price and how soon you can make delivery (the sooner the better), and I will have the regular Purchase Order issued by my Purchasing Department.

Yours very truly,

A/6235.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON, ^{PRESIDENT.}
WILLIAM L. GARDNER, ^{VICE-PRESIDENT.}
BENJAMIN B. THAYER, ^{VICE-PRESIDENT.}
THOMAS ROBINSON, ^{VICE-PRESIDENT.}
THOMAS ROBINS, ^{SECRETARY.}

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

June 3, 1918.

To the Members of the Laboratory Committee:

The Chairman requests that the members of the Laboratory Committee meet at 9 A. M. on Saturday, June 8, at the Carnegie Institution to discuss the enclosed report of Messrs. Brunton and Condict.

The report is sent you so that you may become familiar with its recommendations in advance of the meeting. It represents in a measure a consensus of views obtained from interviews with various members of the Board and visits to various Government and private laboratories, as mentioned in the report.

Very truly yours,

THOMAS ROBINS,

Secretary,

Per

**NAVAL CONSULTING BOARD
OF THE UNITED STATES**

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN B. THAYER,
VICE PRESIDENT.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

JUN 3 1918

To the Members of the Naval Consulting Board:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
JUN 8 1918 in the Carnegie Institution, Wash-
ington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS.

Secretary.
NAVAL CONSULTING BOARD.

Per *D.*

June 4, 1910.

U. S. Geological Survey,
Washington, D. C.

Mr. Edison wishes to obtain the
Haute de Grace section of your map which will show
Aberdeen, where the Government has its trial range.

We do not happen to have one of your
Index Maps, or Key, so I cannot give you the number
of the section referred to. Will you kindly mail
to me, at your earliest convenience, this section,
and I will hand it to Mr. Edison.

It might be useful if we had here at
the Laboratory one of your Index Maps.

Yours very truly,

Assistant to Mr. Edison.

A/5243.

RECORDED

COPY:

June 6, 1918.

From: Thomas A. Edison, Orange, N.J.
To: Commandant, Third Naval District.
Subject: Extension of release from active duty
granted to George B. Hanford, Jr.,
Oiler, Naval Coast Defense Reserve,
Class 4, USNRF, 48 Spruce Street, Bloomfield, N.J.

Dear Sir:

1. This man's present release from active duty expires
July 5, 1918.

2. This man has become one of an active party of three men,
who are valuable to me in the development of an important experimen-
tation which is now at a critical stage. Our tests in Florida
were very successful and opened a large field for future efforts.
Our work for the next few weeks will be conducted from my laboratory
in Orange, N.J. We will then locate upon a new proving ground
here in the North.

3. In order to eliminate the necessity of securing extensions
of his release, I will now ask for an indefinite release from
active duty for this man Hanford, such release to remain in force
until this important Government work is completed, which may take
from three to five months and possibly longer. Of course, I will
notify you at once when his services are no longer valuable to
this work, at which time he will report for assignment in the Navy.

4. It is important to confine the knowledge of the workings
of this experiment to the smallest possible number of people.
Therefore, I am asking for the continued help of Hanford until the
experiments are completed, so that I will not have to take in a
new man.

Yours respectfully,

(signed) Thos. A. Edison.

June 7. 1918

L

Mr. W. H. Meadowcroft
Orange, N.J.

Dear Sir

I just received Mr. Edison's letter of recom-
mendation, and wish to thank him for the kind
assistance he is giving me, which will undoubtedly
be of great value to me in the near future.

Thanking you also for helping me in this matter,
I am, with best regards,

Very truly yours, Henry Lane.

1703 New York Ave
Washington, D.C.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON, President.
WILLIAM L. SAUNDERS, Vice-President.
BENJAMIN D. THAYER, Chairman.
THOMAS MORSE, Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

W.L.S.
June 6, 1918.

TO THE MEMBERS OF THE NAVAL CONSULTING BOARD,
Gentlemen:-

At the meeting of the Laboratory Committee of the Naval Consulting Board held today, it was decided that the enclosed list of suggestions for development and investigation was not sufficiently broad and comprehensive to include the different classes of work which would probably be brought to the laboratory and it was suggested that the committee write to each member of the Board asking them to suggest additions and amendments to the enclosed list.

Please send us your views at the earliest possible date to this address, and oblige,

Very truly yours,

NAVAL CONSULTING BOARD,

W.L.S.
Member and Secretary.

Enc.

[ATTACHMENT/ENCLOSURE]

Suggestions for Preliminary Development & Investigation.

The following list of desirable lines of development have been suggested by the Board members and Naval Officers and it would be well to select out of this list such lines as could be most easily started, and for which there is the greatest demand.

Experiments to determine the best method of reducing the skin friction resistance for ships.

The firing of mines magnetically for short range work.

The development of electric welding to replace riveting in ship building.

The development of metal reflectors gold-plated to replace glass along lines now being experimented with abroad.

The determination of the most effective materials to be used for securing the greatest illumination in searchlight carbons.

An improvement in lining for guns.

The production of fuel oil from sources not now available.

The testing of internal combustion engines and accessories such as spark plugs.

To determine the rate of flow of oil of high viscosity through pipes of various sizes- a most important matter for the Navy.

A radio direction finder for aircraft.

Anti-static devices for radio receiving.

Sound amplifiers.

Simultaneous sending and receiving on shipboard.

[ATTACHMENT/ENCLOSURE]

Wireless telephones
Valve transmitters
Detonating devices for depth bombs
Radiometric work
Gauges
Magnetics
Light alloys
Fire retarding paints
Aeronautic cameras
Wallboards
Anti-freezing solutions
Heat treatment of aluminum-magnesium copper alloys
Ignition devices
Electroplating of military supplies
Photometry of self-luminous materials
Searchlight testing
Aluminum solders
Acid resisting alloys
Conservation of tin in bearing metals
Embrittling effect of metal coating processes
Steam pressure regulators
Heat treatment of forgings
Lock nuts
Anti-friction bearing metals
Steam generation using atomized fuel
Aluminum alloys
Fuel briquettes
Centrifugal pumps
Non-ferrous alloys
Turbo air pumps

C O P Y

Report to
THE SECRETARY OF THE NAVY
on the subject of
the proposed

NAVAL LABORATORY

---oo---

This Report was made by the
Sub-Committee
and was approved by the

NAVAL CONSULTING BOARD

June 8, 1918.

From: The Naval Consulting Board,
To: The Secretary of the Navy.

This report was compiled by experts of the Board who visited and interviewed various members, officers of the Navy and others and who personally inspected the following:

Bureau of Mines Laboratory; Bureau of Standards Laboratory and Shops; The Remington Arms Company Plant; The Engineering Experiment Station, Annapolis; The Electrical Testing Laboratories, New York City; The General Electric Company Shops and Laboratories, Schenectady, N.Y.; The Shops at the Torpedo Station, Newport; The Shops at the Submarine Base, New London; The Shops at Gould and Eberhardt, Newark, N.J.; The Shops at The General Vehicle Company, Long Island City.

While this investigation is not yet completed, we respectfully make the following recommendations at this time with the object of giving a basis for the consideration of the matter by the Committee:

It should be borne in mind that these recommendations are intended to cover simply an initial installation which will serve as a nucleus around which to center future developments and it is anticipated that such developments will have to be extensive and adequate to meet problems which can not now be foreseen.

Transportation of Freight and Passengers.

There now exist facilities for transportation by both rail and water to the U. S. Naval Magazine on the property adjoining the proposed location of the Laboratory at Bellevue, Washington. The Baltimore & Ohio Railroad have a track along the eastern boundary of the property, and this track should be extended down to the waterfront for the transportation of materials including coal for the power plant.

As the river is shallow along the front of the property, it will be necessary to extend the wharf out a distance of at least 900 feet in order to secure sufficient depth of water to permit the docking of small naval vessels, such as torpedo boats. Facilities for both rail and river transportation should be provided at once, so that the materials for construction of the plant can be easily delivered at the property.

With reference to passenger transportation, it would be desirable if the street railway line, which now crosses the B & O track a short distance north of the property, should extend its line down to the laboratory by installing a trolley wire over the railroad track.

Buildings

The buildings to be provided should cover accommodations for office, drafting room, machine shop, chemical and physical laboratories, rooms in which inventors and scientists can develop their ideas without undue publicity, pattern and woodworking shop, forge shop and possibly furnaces for both brass and steel castings. The power house should be located near the waterfront in order that fuel may be delivered either

by rail or water.

As there is ample space on the property for future expansion, one-story fire-proof buildings could be erected and used to best advantage.

For this purpose the saw-tooth type of building is preferable owing to the efficient and satisfactory lighting, and a print of a preliminary sketch is attached hereto showing a building of this type, 160 feet wide by 400 feet long with 15 feet clearance between floor and under side of girders, in four bays, each 30 feet in width and 25 feet clearance in one bay 40 feet in width; all with columns spaced 20 feet centers through the length of the building. The drainage from the roof would be carried down the columns on the inside of the building, and would be of ample capacity to take off any possible accumulation of water.

This building should be located near the river which runs from north to south, the length running back from the bluff which at this point is approximately 18 feet above mean high water. The saw-tooth roof construction should run from east to west, so that the glass will face the north, thus giving the most satisfactory light for all purposes inside the building. By making the four sides of the building largely of glass, there should be no dark corners.

The most satisfactory material for roofing is Gypsum Tile. This material being fire-proof and non-conducting and by a suitable covering on the outside, waterproof.

The floor would be of concrete slabs 4" in thickness with a 2" covering of cinder concrete tamped between strips of wood to which would be nailed 2" spruce or hemlock planking, and

that portion selected for office and drafting room covered by 7/8" maple flooring. Partitions which should be easily erected and taken down at small expense should be made of Pyrobar slabs.

The curtain walls would be built of brick unless it should be determined that concrete could be secured at a lower figure, which can only be determined at the time that actual bids are secured.

The approximate cost of the above building ready for occupancy including the necessary radiators for heating would be \$190,000, and there are companies who will enter into a contract to complete the structure inside of 60 days from signing the agreement.

Power House

It would seem advisable to install for immediate use while the permanent power plant is being erected, a temporary power equipment, and the Bureau of Steam Engineering at Washington is prepared to furnish information which has been sent to them in reference to second-hand power equipment which could be borrowed or secured at once at a low figure.

An ample supply of electric current for power, lighting, and experimental purposes must be available, and at this stage of the enterprise it is impossible to determine the maximum requirements so that provision should be made for future expansion.

A brick power house, as per sketch attached, 60 ft. by 100 ft., can be erected at a cost of approximately \$35,000. The approximate cost of the Power Plant would be about \$100,000.

Pattern Shop, Store House, Forge Shop.

It is proposed to erect a pattern shop, 40 feet by 100 feet, a store house, 60 feet by 100 feet, and forge shop 40 feet by 60 feet, at a total cost of.....\$34,000.

Equipment

In securing quotations of the equipment for power plant, shop, laboratory, offices, etc., no attempt was made to obtain lowest prices, the endeavor being rather to make liberal allowance for all contingencies, and therefore the figures given are higher than would be the case in the event of competitive prices being secured.

An endeavor has been made to so proportion the standard equipment that it will be complete and enable the building and testing of the different classes of apparatus which in the opinion of the Board, should be developed at the Laboratory, it only being necessary to add the special equipment required by each case as it is taken up.

Machine Shop Equipment.

This equipment should comprise tools of the very best make, complete in every particular, and covering the entire range of ordinary shop practice. All tools as far as practicable should have individual motor drive, so as to largely obviate the use of line shafting and belts. The following list of machine tools would probably cover the equipment for the initial installation:

| | | |
|----|---|-------------|
| 10 | Pratt & Whitney 7" x 32" bench lathes with benches, collet racks and counter- shaft rods and one complete set of attachments | \$ 4,192.40 |
| 2 | Pratt & Whitney 10" x 5' tool room lathe with compound elevating-rest and regular and extra tool equipment | 2,760.00 |
| 1 | 11" x 4 ft. Blount speed lathe, motor driven with full equipment | 215.00 |
| 8 | 14" x 8 ft. Lodge & Shipley selective head quick changing gear screw cutting lathes, motor driven with extras | 14,286.00 |
| 1 | 20" x 16 ft. Lodge & Shipley selective head lathe with regular equipment, in cluding taper attachment, chip pan, motor driven | 2,800.00 |
| 4 | No.-2-A Brown & Sharpe Universal millers, motor driven | 9,740.00 |
| 2 | No. 2-B Brown & Sharpe plain miller with pump, motor driven | 3,850.00 |
| 2 | No. 1 Brown & Sharpe vertical miller with motor and countershaft | 3,980.00 |
| 1 | No. 00 Pratt & Whitney bench milling mach- ine with cutters | 656.00 |
| 1 | 3-1/2 ft. Cincinnati-Bickford plain rad- ial drilling machine, with swivelling table, complete with regular equipment, with variable speed motor | 1,975.00 |

| | |
|---|-------------|
| 2 - 21" Cincinnati-Bickford sliding head drills, complete with tapping attachments and geared motor drive, with motor | \$ 1,600.00 |
| 2 - 24" Cincinnati-Bickford high speed shaft driven sliding head drills, with tapping attachment and compound table, variable speed drive, with motor | 2,400.00 |
| 3 - No. 1-B Avey tool room drilling machines with all bearings and two tables and cup and crotch centers, belt driven . | 690.00 |
| 3 - No. 2-1/2 Avey con-spindle high speed ball bearing drilling machines, belt driven, 12" overhand | 750.00 |
| 2 - Gould & Eberhard 16" high duty crank shaper with vise and regular equipment to have swivelling table with tilting top and arranged for variable speed motor drive, with motor | 3,100.00 |
| 2 - Gould & Eberhard, high duty crank shaper with regular equipment, arranged for variable speed motor drive, with motor | 4,000.00 |
| 1 - 24" x 24" x 6' Cincinnati planer with one head, complete with motor | 5,200.00 |
| 3 - 18" Cincinnati Acme Universal turret lathes with geared friction head stock, chasing attachment, belt driven | 2,820.00 |
| 1 - Cochran-Ely bench filing machine, belt driven | 40.00 |
| 1 - 1" x 7" Cincinnati Acme screw machine, plain head, belt driven | 570.00 |
| 1 - No. 1 Universal grinding machine with motor, Brown & Sharpe | 1,690.00 |
| 1 - Brown & Sharpe No. 2 surface grinder with motor and magnetic clutch and 4 $\frac{1}{2}$ " index centers and adjustable swivel vise | 845.00 |
| 1 - No. 3 Universal cutter grinder and reamer and form cutter grinding attachment with motor | 690.00 |

| | |
|--|-----------|
| 1 - 20" Blount wet tool grinder with wheel, pump and truing device, complete, belt driven | \$ 144.00 |
| 1 - No. 3 Blount double emery wheel grinder with guards, wheels, etc. complete, belt driven | 60.00 |
| 1 - 13 ft. x 6 ft. Blount speed lathe with hand rest and self-oiling head and slide rest, belt driven | 185.50 |
| 1 - Type B United States portable electric drill, capacity up to 1-1/4", complete with motor | 54.00 |
| 1 - Type D ditto, capacity up to 1/2" | 82.00 |
| 2 - " H U.S. portable electric grinders with wheels, complete with motors | 108.00 |
| 1 - Type KK U.S. electric bench grinder, complete with wheels and motor | 108.00 |
| 1 - Bullard 42" Vertical turret lathe, arranged for motor drive with motor for direct current; includes four-jaw chuck in table | 8,000.00 |
| 1 - set of tools for above | 200.00 |
| 1 - No. 3 Cincinnati-Acme Universal flat tur- ret lathe, geared head type, with com- plete equipment for bar and chuck work; to have taper attachment and motor for D.C. | 4,500.00 |
| 1 - 2-1/4" x 26" Cincinnati-Acme flat turret lathe with bar and chuck equipment and motor for D.C. | 2,400.00 |
| 2 - #3-1/2 Greenerd arbor presses with iron floor stands, @ \$77.50 each | 155.00 |
| 1 - #5 Greenerd arbor presses | 175.00 |
| 1 - Wilmarth & Mormon Twist Drill Grinder with capacity to grind from 3/32" to 1-1/4" drills, belt driven | 166.50 |

| | |
|---|---------------|
| 1 - Wilmarth & Mornan Twist Drill grinder with capacity to grind from 1/8" to 2-1/4" drills, belt driven | \$ 200.00 |
| 1 - #4 Stoever pipe machine, complete with dies for cutting and threading up to 4" diameter pipe, to be motor driven and complete with motor for D.C. | 1,100.00 |
| 1 - Gear cutting attachment 12" for #2 Cincinnati Miller | 170.00 |
| 1 - Ryerson Quadruple Combination Punching and Shearing Machine, motor driven ... | 1,492.00 |
| 1 - Lennox Serpentine shear #3 | <u>663.00</u> |
| Total | \$88,811.40 |

The cost of machine shop furniture and
small tool equipment will be \$25,000.00

Forge Shop.

| | |
|---|--------------------|
| 4 - No. 96-R Buffalo stationery down-draft | \$ 680.00 |
| forges | 150.00 |
| 2 - Blowers | 250.00 |
| 2 - Exhausters | 500.00 |
| 2 - Motors | |
| 1 - Bradley upright strap hammer, 150 lbs. with 6 H.P. motor | 1,209.00 |
| Underground tile ducts | 500.00 |
| Installation, piping and freight | 410.00 |
| | <u>\$ 3,699.00</u> |

Small Tools, etc.

| | |
|---|-------------------|
| 4 - Anvils - 200 lbs. @ \$42.00 each | 168.00 |
| 4 - Sets fire tongs and shovels \$3.00 pr. set | |
| " blacksmith tongs | 12.00 |
| " Bar dies | 28.00 |
| " Sets sledges @ \$5.90 per set | 5.00 |
| " Hand hammers @ \$1.25 per | 23.60 |
| " Ball Pein hammers @ \$1.25 each | 5.00 |
| " Cold chisels @ \$1.50 each | 5.00 |
| " Hot " @ \$1.50 each | 12.00 |
| " 3" flatter @ \$1.75 each | 6.00 |
| " 4" flatter @ \$1.75 each | 7.00 |
| 80 - Top and bottom swages @ \$1.25 | 100.00 |
| 40 - Fullers @ \$1.25 each | 50.00 |
| 100 - Lbs. Welding compound | 10.00 |
| 24 - Round blacksmith punches @ \$1.00 each. | 24.00 |
| 12 - Square | 12.00 |
| 1 - Tire measure | 2.50 |
| | <u>470.10</u> |
| | <u>\$4,169.10</u> |

Pattern Shop.

| | |
|---|--------|
| 1 - 42" American band saw, with iron tilting table, furnished with 1/2" blade 22' 6" long, brazing clamp and tongs, wire mesh guards, etc. | 462.00 |
| 1 - #10 American Standard 36" band saw with iron tilting top, wire mesh guards, etc. . | 306.00 |
| 1 - American self-contained jig saw | 200.00 |
| 1 - American direct draft medium swing saw, with adjustable hangers, 16" saw and shield, swing table, automatic stop gauge, 9' long | 218.88 |
| 1 - #20 American Universal saw bench with two steel arbors connected to a revolving yoke, fitted with circular rip saw and one cross cut saw, with safety saw guard fitted to above | 548.00 |
| 1 - #10 American Variety saw bench, with 16" diameter saw, with automatic safety guard fitted | 300.00 |
| 1 - American #444 24" x 7" Single Surfacer, with three knife safety cylinder | 900.00 |
| 1 - American Bench Jointer, fitted on iron pedestal, with round safety head, and safety guard fitted | 198.00 |
| 1 - American #2 1/2 two-spindler shaper with ball bearings and adj. countershaft and safety guards for each spindle | 521.00 |
| 1 - American #2 Vertical Borer | 300.00 |
| 1 - American #2 1/2 Horiz. borer with plain bit socket | 270.00 |
| 1 - American #13 Pattern maker's lathe, 24" swing, 8' bed, with carriage and compound rest | 780.00 |
| (If longer bed is required, same can be furnished at extra cost of \$38. for each add. 2 feet.) | |

| | |
|---|------------|
| 1 - American 12" speed lathe, 72" bed | \$153.00 |
| Extra accessories for above - | |
| Rear end face plate and stand | |
| with angle rest 13.80 | |
| Carriage and compound tool | |
| rest 75.60 | |
| Universal hand turning tool | |
| holder 15.00 | |
| Set-over tail block 28.80 | 133.20 |
| 1 - American #2 Universal Sand Papering machine, with vibrating spindle and 27" diam. sand disc. | 220.00 |
| 1 - American Grindstone frame, with 36" diam. x 4" wide grindstone | 75.60 |
| 1 - Perkins #14 Universal Draw cut trimmer, inc. stand, to trim stock 8" thick by 12" wide | 95.00 |
| 1 - do. #8 to take in stock 4-3/8" x 7-1/2".... | 55.00 |
| Total | \$7,137.68 |

| | |
|-----------------------------------|-------------|
| Motors for individual drive | 2,726.70 |
| Total | \$9,864.58 |
| Small equipment | 1,178.10 |
| Total | \$11,042.48 |

Brass and Steel Furnaces.

There is a great demand by different departments of the Government for small steel castings and it has been suggested that the equipment at Bellevue should cover an electric steel furnace of at least one-ton capacity. A brass furnace is also recommended.

Compressed Air.

It would appear essential that a small compressed air plant should be installed -

- 1 - XB2 Imperial Compressor, 12" and $7\frac{1}{2}$ " x 12" 327 cu. ft. min. 57 H.P. - 100 lbs. pressure, complete with Westinghouse motor receiver 42" x 8" .. \$2,950.00

Chemical and Physical Equipment.

Chemical and physical equipment of the standard and most frequently used types should be provided to which can be added special apparatus as the demand for same arises. Such equipment as could be safely secured at this time could be purchased for \$25,000.00

Cranes.

Travelling cranes of one and two ton capacity operated from the floor may be advantageously used in some of the small bays, and in the large bay a travelling crane of ten-ton capacity. The railroad track would be extended into the building under this crane to permit unloading direct from the cars.

It may be advisable to install jib cranes for some of the larger tools in order that work may be easily handled.

The approximate cost of installing travelling cranes suggested above is as follows:

| | |
|-----------------------------------|-------------|
| 1 - 10-ton traveling crane | \$10,000. |
| 3 - 2-ton floor operated cranes | \$2,150. |
| 3 - 1-ton " " | 2,000. |
| 800 - Ft. 45-lb. T-rail | 1,508.50 |
| 1440 - Ft. 20-lb. " | 1,799.40 |
| fittings, installation, etc. | 1,000.00 |
| Total | \$26,757.90 |

Office Equipment.

| | | |
|--|--------------|--------|
| 6 - Desks | each \$45.00 | 270.00 |
| 6 - Desk Chairs | " 15.00 | 90.00 |
| 12 - Side Chairs | " 8.00 | 96.00 |
| 6 - Combination Card and Letter File Units | " 40.00 | 240.00 |
| 4 - Typewriters | " 75.00 | 300.00 |
| 4 - Typewriter chairs | " 12.00 | 48.00 |
| 4 - Desk desks | " 35.00 | 140.00 |
| 5 - Plain Oak Tables | " 15.00 | 90.00 |
| 5 - Side chairs | " 5.00 | 30.00 |
| 12 - Desk Letter trays | " 2.00 | 24.00 |
| 12 - Waste Paper baskets | " 3.00 | 36.00 |
| 6 - Hat racks | " 6.00 | 36.00 |
| 6 - Metal filing cases for correspondence | " 41.00 | 246.00 |
| 1 - Card file and base (10,000) cards | | 50.00 |
| 2 - Fire-proof safe cabinets | | 600.00 |
| 1 - Large table for Committee Room | | 100.00 |
| 24 - Arm chairs " " ea.12.00 | | 288.00 |
| 24 - Clothes Closets (Metal) | 18.00 | 432.00 |
| 1 - Book case for Library | | 75.00 |
| 1 - Catalogue Cabinet | | 20.00 |

| | |
|--|------------|
| Incidentals including - | |
| Ink wells, desk pads, electric fans, cuspidores, umbrella stands, etc. | 300.00 |
| Total ... | \$3,355.00 |

Draughting Room Equipment.

| | | |
|--|--------------------------|-------------|
| 10 - #2590-P American Drawing Tables | 42 x 84 | |
| | with parallel attachment | #2549 X & M |
| 3 - #2595 Chest of Drawers | | |
| 10 - Stools with revolving wooden seats | | |
| 1 - Doz. #1855-10" 30 x 60 degree Xylonite Triangular Scales | | |
| 1 - Doz. 6" | ditto | |
| 1 - Doz. 8" | ditto | |
| 1 - Doz. 4" | ditto | |
| 1 - Doz. #1621-P Paragon Triangular Scales | | |
| 1 - Doz. #1631-P | ditto | |
| 1 - Doz. #1400-P | ditto | |
| 2 - Doz. Small bottles Higgins black ink | | |
| 1 - Doz. do. carmine | | |
| 1 - Doz. do. assorted | | |
| 5 - Doz. #5455-G Green erasers | | |
| 2 - Doz. #5418 Ink | | |
| 1 - Roll S-50 Duplex paper, 36" wide, 40 lbs. | | |
| 12 - Doz. El Dorado pencils | | |
| 1 - Roll #156 Imperial Tracing cloth 36" wide, | | |
| 24 yds. per roll | | 8996.01 |
| 1 - Blue streak blue printing machine | | 1265.00 |
| 1 - Electric Drying machine | | 800.00 |
| 1 - Zinc Bath Tray | | 25.00 |
| | Total | \$3,106.01 |

Electric Light & Power.

Service to extend from the Power House to the northwest corner of the Laboratory Building underground, of capacity sufficient for the ultimate total D.C. load of the building.

In the northwest corner of the building install a general service and distribution switchboard, preferably of the cabinet type, for both light and power.

Lighting Distribution Scheme.

At each of six points uniformly distributed throughout the building install a lighting panel, preferably of the dead-front safety type and to each of these panels run a feeder consisting of three (3) #1 cables in conduit from the main service board. From these panels run circuits in conduit to the various outlets which should be of 300 watts capacity, and run two to a circuit; the control being entirely from the six lighting panels before mentioned.

The lighting fixtures should consist of rigid conduit stems with shallow bowl reflectors. In some cases 300 watts will be more than required and at such points Mogul adapters can be installed, permitting the use of any smaller size of lamp. The stems should be of such length as to bring the tip of the lamp approximately level with the truss.

Provision should also be made for a line of 40 watt receptacles extending the entire length of the north side of the building at a height of about 4 ft. for bench work, and spaced at intervals of about 10 ft. These can be used after the building is occupied for such types of portable fixtures as may be deemed necessary in each location.

Power Distribution Scheme.

Locate six power panels, preferably on the same columns with the lighting panels back to back. Each power panel to have six (6) 30 amp. and six (6) 60 amp. knife switches, and be fed from the main service board by two (2) 4/0 cables in conduit.

The general scheme of distribution from these panels to the motors cannot be determined until the sizes and locations of the motors are determined but, in general, it will be practical to group a number of small motors on one circuit, leaving the larger switches for heavier motors which may be required.

It is estimated that the cost of this installation, including a reasonable allowance for the wiring between the power panels and the motors, will be approximately\$18,000.00

RECAPITULATION

Buildings -

| | |
|--|--------------|
| Shop | \$190,000.00 |
| Pattern Shop | 12,400.00 |
| Pattern Storage | 15,000.00 |
| Forge Shop | 6,600.00 |
| Power House | 35,000.00 |
| Power Plant | 100,000.00 |
| Machine Tool Equipment | 88,811.00 |
| Small " " | 25,000.00 |
| Forge Shop | 4,169.00 |
| Pattern Shop | 11,042.00 |
| Travelling Cranes | 26,758.00 |
| Compressed Air Equipment | 2,950.00 |
| Piping, Valves, etc. | 2,000.00 |
| Chemical & Physical Equipment | 25,000.00 |
| Electric Light & Power Circuits with fixtures .. | 18,000.00 |
| Sanitary fixtures | 2,100.00 |
| Lockers, expanded metal 100 at \$1.15 | 1,115.00 |
| Water supply | 8,000.00 |
| Drafting Room Equipment | 3,106.00 |
| Office Equipment | 3,335.00 |
| Freight and Installation | 15,000.00 |
| Total | \$595,386.00 |

It appears that there are several large shops in the country which have been equipped by the Government with machine tools and accessories for the purpose of manufacturing for the Army and Navy, but which up to the present time have not performed any work. As it will be difficult to secure immediate deliveries of a great many of the tools which will be needed, it might be possible to appropriate some of the equipment owned by the Government for the use of the Research Laboratory.

A large number of motors and some of the tool equipment which were used by the Government in the large irrigation projects in the West were sold to various concerns and information is being secured as to the possibilities of getting hold of some of these machines in case of necessity.

In quoting on the equipment covered herein a large amount of detail has been furnished which is not embodied in this report, but which is on hand in case a more exhaustive presentation of any of the various items is desired.

A list of suggestions for development and investigation in this laboratory is being prepared in consultation with the various members of the Board, which will be submitted in the near future.

Respectfully submitted,
(signed) W. L. Saunders,
Chairman.

June 10, 1918.

Mr. Bruce K. Silver,
c/o Mr. Richmond Loring,
Special Agent, Department of Justice,
123 Broadway,
New York, N.Y.

Dear Mr. Silver:

I have been expecting, from day to day, to hear from you as to how you are getting along and what prospects there are of your return to the work.

We would like to know something more definite than what we know at the present time. There is a question of money involved. I will explain. On April 1st, the Assistant Attorney General wrote to Mr. Edison at Key West stating that you had been recently assigned to continue certain experiments at Washington in connection with Dr. Walter C. Schools. It was the understanding of the Department of Justice that you were compensated from a fund placed at Mr. Edison's disposal through the Secretary of the Navy. The Assistant Attorney General stated that you might remain two or three weeks longer (at that time) in connection with the work on which you are engaged for the Department of Justice, and it was suggested that in order to avoid confusion you should continue to submit your accounts as usual during that time.

This is more than two months ago, and there has been no change in these financial arrangements; nor does it appear how much longer you will be engaged for the Department of Justice.

The difficulty, so far as we are concerned, is that under present arrangements we are compelled to charge your time to the Shop Order Number on which you were working. Some day we may receive a visit from a United States Auditor who will wish to look over our accounts and it will involve a great deal of explanation when this particular item is considered.

-2-

Can you give us any definite information as to when you will be through your work for the Department of Justice? If your work in that direction is to be prolonged indefinitely, Mr. Edison ought to know, and our Accounting Department would desire to get some information also. We will probably have to consider what can be done towards effecting a transfer of the payments we have made to you for salary during the last two months from the Navy accounts to those of the Department of Justice.

Trusting that I may be favored with an early reply,
and with kind regards, I remain,

Yours sincerely,

Assistant to Mr. Edison.

A/5260.

ADDRESS ALL COMMUNICATIONS TO
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.

PLEASE REFER TO FILE
NO.

SHIP PROTECTION COMMITTEE

UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.
ROOM 413, PLANT BUILDING

June 11th, 1918.

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, New Jersey.

Dear Mr. Edison:

The week following my visit to you, and our talk over the question of listening for torpedoes, I brought the matter up before the Ship Protection Committee of the United States Shipping Board, and got that committee to recommend that ships traversing the submarine zone should have internal bow tanks fitted with microphones placed in them with extension wires to listening post at the wheel.

I told the committee of the work which you were doing, and that you expected that you would be able to get a more advantageous placing of the microphones, but that you felt that it would be worth while to go ahead with the plans which I recommended, and that substitute or change could be made later when your work was completed.

I also mentioned to the committee the work which you were doing with the sea anchor and told them in general terms the results which you had accomplished, and stated that I expected to keep in touch with you regarding future developments in this line.

I would very much appreciate it if you would let me know the progress of this work, and would very much like to witness some of the tests with the sea anchor if you are to make any in the near future. If this can be arranged, will you please advise me at my office at # 55 Liberty Street, New York City, when and where such tests will be made.

I received last week a copy of a confidential report from the office of Naval Intelligence, based on information obtained from abroad. This report stated that in the month of April, this year, a series of tests were conducted in listening to torpedoes fired in the vicinity of a patrol boat equipped with what is known as the Walser apparatus, which I understand is an acoustic device, and the results reported were that the torpedo could be detected as soon as fired at a distance of about 1200 meters, and it was recommended that additional tests be made to follow up the matter.

AMERICAN ASSOCIATION FOR
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.

SHIP PROTECTION COMMITTEE
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.
ROOM 413, PLANT BUILDING

PLEASE REFER TO FILE
NO.

Mr. T. A. E.
Sheet # 2,
June 11, 1918.

The report from the French source also suggested the possibility of the use of a sea anchor attached to the bow of the vessel by means of a hawser.

It struck me as rather interesting that they had actually tumbled on to the things with which you have been working for such a long time.

Thanking you in advance for the courtesy of your reply,
I am,

Yours sincerely,

A. M. Hartung.
Member
NAVAL CONSULTING BOARD
UNITED STATES SHIPPING BOARD

AMH/RL

Day I will let him know
when listening device is ready
for test on Sachem - as to
sea anchors I have 4 anchors
of nine foot area, and will
make a demonstration on a

Cargo boat as soon as listening
device is in good condition
providing shipping board
will let me use a cargo
boat going out for one
day - then she can proceed

I have kept the English
Admiralty fully informed
about my devices as far
back as a year —

S

With our country at war save time, money, and effort by NOT acknowledging this letter unless you wish further information.
If the Geological Survey has served you it has simply done its duty and will take your appreciation for granted.

17 DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
WASHINGTON

OFFICE OF THE DIRECTOR

June 11, 1918.

Mr. Wm. H. Meadowcroft,
Assistant to Mr. Edison,
Orange, N. J.

Dear Mr. Meadowcroft:

In response to your letter of June 4:

I have taken pleasure in sending to you, under separate cover, a copy each of the Havre de Grace and Belvoir, Maryland, topographic sheets which cover the vicinity of Aberdeen, Maryland.

The topographic maps are ordinarily distributed through sale but I am glad to be able to furnish these with the compliments of the Director from a few places at his disposal by retiring Members of Congress.

The index map herewith shows the progress of topographic surveying in Maryland and Delaware. Should you need any other sheets I hope you will not hesitate to request them.

Yours very truly,

H. C. Biggar
Chief Clerk.

Inclosure.

5286

W. H. Meadowcroft, Esq.,
Edison Laboratory,
Orange, New Jersey.

Dear Mr. Meadowcroft:

To

I happened to go to New York yesterday afternoon and passed the "Sachsen" in the river, stopped and visited with the crowd aboard, and was reminded of a really good intention to write you for some weeks past. On my arrival at the office, I found your letter, and I hasten to write you and apologize for my negligence.

The work here in connection with the Department of Justice has reached a development that none of us dreamed of, in the earlier stages of the investigation. The people in Washington have become so enthusiastic that the actual manufacture of the incendiary bombs is underway for rushed shipment to Europe. In the midst of all of the excitement, I have been made responsible to the Department of Justice for all of the experimental work, and act as a sort of buffer between the Army, Navy, and Justice Departments. As you can imagine, I have been just about as busy as possible. In addition, I planned and had constructed from the ground up, a laboratory, completely equipped it; and assumed general charge over the experiments involving the "Doctor's" ideas.

I labored under the delusion that satisfactory arrangements had been made with Mr. Edison by the Attorney General, for my compensation, else I should have written you long ago. Very early in the Washington work, I appreciated the injustice that might be done Mr. Edison, by putting in an expense account for work with another Department, and stepped sending in my accounts on April 2nd. The expenses sent in at that time covered only the expenditures on the trip from Key West to Washington. Since that time there have been no accounts sent in. I found that there were funds available for our general expenses and laboratory needs, so in a telephone conversation with Mr. Kellie, I made it clear at the time, that on this account, my general expenses would be taken care of through funds available through the Department of Justice.

On receipt of your letter, I presented the situation to the Department, and I hope that you have received a letter of explanation by this time.

I have asked Mr. Richmond Levering, who has general charge here
of the work for the Department, to write you at length, and answer
the questions you have asked me. My only desire in the whole
matter is do the right thing, and accomplish the most service.
I should hesitate to make any move which would not meet with
Mr. Edisen's approval, for I realize only too well, that my
connection with him, made this work, which has become of such
absorbing interest, possible.

Incidentally, my pay coupons for the past month have not been
forwarded to me. Of course the disposition of that amount
will await any arrangement which Mr. Edisen will make with the
Department of Justice.

I hope that you will appreciate the peculiar position in
which I find myself placed, and I should welcome any suggestion
which you would make to straighten out the whole affair.

With kindest regards to yourself and my friends at the
laboratory, I remain,

Sincerely yours,

120 Broadway
New York City
June eleventh
1916

Bruce R. Philor

June 12, 1918.

Mr. A. H. Hunt,
c/o Ship Protection Committee,
United States Shipping Board,
Room 413, Plant Building,
New London, Conn.

Dear Mr. Hunt:

I have received your letter of the 11th instant and beg to say that I will let you know when the listening device is ready for test on the "Sachem".

As to sea anchors, I have four anchors of nine foot area, and will make a demonstration on a cargo boat as soon as the listening device is in good condition, provided the Shipping Board will let me use for one day a cargo boat going out. Then she can proceed.

I have kept the English Admiralty fully informed about my devices as far back as a year.

Yours very truly,

A/6286.

Department of Justice,
Bureau of Investigation.

5381
New York City.

June 12th, 1918.

Mr. Thomas A. Edison,
East Orange, N.J.
Attention of Mr. William H. Meadowcroft.

Dear Sir:-

Your letter of June 10th, addressed to Mr. Silver, has been submitted to me in order that Mr. Silver might make some definite reply to your questions. The work at Jones Point has progressed and extended beyond any possible expectations that any of us held in regard to the experiments of Dr. Scheele's various propositions. The Department of Justice, of course, made the first request for the services of Mr. Silver, to aid them in determining whether Dr. Scheele was giving information which was reliable. It was found reliable. The Army and Navy became interested and we have finally arrived at the point of actually producing bombs in quantity, based on the original experiments.

Both Army and Navy officers have been definitely attached to the laboratory and there is much work of importance being done by these officers in which Mr. Silver has been sort of a connecting link between all Departments. It is a peculiar situation, largely based on personal equation, and one which I think none of the Departments would like to disturb.

With regards to Mr. Silver's compensation and accounts, it would be my suggestion that inasmuch as he is working jointly for the benefit of three Departments, and almost exclusively on new experimental work, that funds applicable, through you, for such experimental work, would probably be the simplest and most logical funds to which they could be charged. On the other hand, I think Mr. Edison, as well as the Army and Navy officers and the Bureau of Mines, should be entitled to know the progress of the work, and if we desire to do so, make recommendations with regard thereto. Therefore, I have suggested that

Thomas A. Edison

-2-

Mr. Silver send the back reports on the work, and send copies of the same reports that are made every few days to Colonel Ragdale and Commander Wilkinson and to our Department. If you see any objection to this arrangement, I will take it up with one of the other Bureaus in Washington to make some further adjustment, but changes in accounting matters there involve so much red tape that I would be glad to avoid the undertaking.

With regard to the time that these matters will go on, I should say it was absolutely indefinite. There are more officers being attached to the Staffs, the laboratory is being equipped for new work and the plant, itself, is being built up around the results there produced, which have been most encouraging.

I remain,

Very sincerely yours,

W. E. Clegg, Jr.
For the Department
of Justice.

RL/E

EDWARD H. HURLEY, CHAIRMAN
RAYMOND D. STEVENS, VICE CHAIRMAN
JOHN A. DONALD, COMMISSIONER
BENJAMIN C. COOPER, COMMISSIONER
CHARLES R. PAGE, COMMISSIONER
LESTER SISLER, SECRETARY

IN REPLY ADDRESS
"UNITED STATES SHIPPING BOARD"
REFER TO FILE NO.

United States Shipping Board
Washington

June 12, 1918.

Hurley

Mr. Thomas A. Edison,
East Orange, N. J.

My dear Mr. Edison:

I was very pleased to learn from Mr. Schwab that you attended the launching at Newark Bay, and was very sorry that I was not there to welcome you.

I hope you liked the story I told in my recent speech, a copy of which I am inclosing.

Hoping you are quite well, and assuring you that I will always consider it an honor to see you when you are in Washington, believe me,

Yours very sincerely,

Edward N. Hurley.
Chairman.

BMH-BH

Inclosure.

June 13, 1918.

Mr. Richmond Levering,
Special Agent, Department of Justice,
115 Broadway,
New York, N.Y.

Dear Sir:-

I have received your favor of the 12th instant in regard to the compensation of Mr. Silver, and have shown the same to Mr. Edison.

He wishes me to say to you that the expenditures he is making to cover the cost of the experiments he is conducting are made under the authority of the Secretary of the Navy. There are paid out of a special appropriation over which Secretary Daniels has jurisdiction.

Mr. Edison says that he has no objection whatever to continue the payment of compensation to Mr. Silver while he is conducting these special experiments for the Departments of Army, Navy and Justice, provided that special authority be given by the Secretary of the Navy.

It seems to Mr. Edison that it would be proper for the Department of Justice to discuss this matter with Secretary Daniels and to obtain such permission if he is willing to give it. We will, therefore, await your action in the matter, and in the meantime Mr. Silver will be obliged to wait for some recompence of compensation due him. In justice to him, therefore, it may not be amiss for me to suggest that the matter be taken up without delay.

Mr. Edison is pleased with your idea of sending him copies of reports, and says that he will be much interested in seeing them.

Very sincerely yours,

A. Assistant to Mr. Edison.

June 13, 1918.

Mr. Bruce R. Silver,
c/o Department of Justice,
120 Broadway
New York, N.Y.

Dear Mr. Silver:

I am glad to receive your letter
of the 11th instant and to become acquainted with
the facts as they stand at the present time in
regard to your work.

I have also received a letter from Mr.
Levering explaining the matter substantially as you
have outlined it in your letter. Inasmuch as Mr.
Edison is spending money from a special fund over
which Secretary Daniels has jurisdiction, it will
be necessary to consult Mr. Daniels as to whether
Mr. Edison can continue your compensation from this
fund.

I am writing to Mr. Levering by this mail
telling him that Mr. Edison would prefer that the
Department of Justice take this matter up direct with
Secretary Daniels and to advise Mr. Edison as to
the result. It may subject you to a little incon-
venience in making you wait for your money, but I am
afraid the matter will have to remain in status quo
until Mr. Edison is notified of the Secretary's decision.

We all join in kindest regards to you, and
I remain,

Yours sincerely,

Assistant to Mr. Edison.

A/6286.

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Teletype | - |
| Day Letter | B.L. |
| Night Message | N.M. |
| Night Letter | N.L. |

If none of these three symbols appears after the date (transmitter of message will be indicated by the symbol appearing after the date).

WESTERN UNION



TELEGRAM

NEWCOMB CANTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Teletype | - |
| Day Letter | B.L. |
| Night Message | - |
| Night Letter | N.L. |

If none of these three symbols appears after the date (transmitter of message will be indicated by the symbol appearing after the date).

RECEIVED AT DR. MAIN ST. & ESSEX AVE.,

ORANGE, N. J.

TELETYPE, 1000 FT. 4001

84 NY R 41 GOVT

MC WASHINGTON DC 1201PM JUNE 13 1918 X

W H MEADOWCROFT

EDISON LABORATORY ORANGE NJ

HAVE RECEIVED CABLEGRAM THROUGH STATE DEPARTMENT AND MILLIKAN OF
 RESEARCH COUNCIL FROM ITALIAN GOVERNMENT REQUESTING EDISON CONFIDENTIAL
 INFORMATION WILL BRING IT UP TOMORROW IF AGREEABLE CAN I BRING ANYTHING
 ELSE PLEASE WIRE

JARVIS BUTLER

108PM

908
 Dr. Main St. & Essex Ave.
 Orange, N. J.
 TELETYPE, 1000 FT. 4001
 JUN 13 1918
 DISCOURSES.....

H. W. TITMAN, PRESIDENT

Main Office: PITTSTON, PA.

H. C. HOOVER, SECRETARY

E. B. BRUMM, TREAS. & GEN. MGR.

Branch Office: MAHANOY CITY, PA.



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An independent Company in no way
connected with a trust.
BOTH PHONES
For prompt attention address reply to

Pittston, Pa., June 13/18.

Mr. Thos. A. Edison,
Orange, N.J.

Dear Sir:

We are in receipt of bill of lading showing shipment
of raw material. Immediately upon receipt of goods
we will make up one batch of powder.

It always requires about three or four days to
get one batch through the different processes.

We will telegraph you as soon as goods are ready
for shipment.

Respectfully,

BLACK DIAMOND POWDER CO.,

E. B. Brumm, HGR.

Italian

G. G. C. C. R.

June 14, 1918.

Mr. Graham Edgar,
Technical Assistant,
Research Information Committee,
of National Research Council,
1025 Sixteenth Street,
Washington, D. C.

Dear Sir:-

A cablegram of June 11th stating that information is desired by the Italian Government regarding Edison system of signalling at sea invisibly to submarines has been shown to me. In reply, I desire that the following shall be communicated to Dr. W. F. Durand, the Scientific Attaché of the Committee in Paris for transmission to the Italian Government.

The working model is being made for me at the Key West Naval Yard by two mechanics from a submarine. This model should have arrived at Orange before this. I will communicate and find out when it will probably arrive.

The idea is to use three aluminum discs each of 12 inches diameter, with one millimeter space between these discs, the surfaces being coated with dull lampblack. A small spiral filament incandescent lamp at the center sends out two parallel beams of light. The discs are rotated by a small motor, making 6,000 revolutions per minute.

The lamp is placed as high up on the mast as possible and provided with a wind shield made of sheet celluloid held in a frame. The lamp is thus kept parallel notwithstanding the rolling of the ship.

An addition has been made of a cup containing mercur; and an electric contact so that in case of accident the lamp is cut out before the beam of light reaches such an angle that it can be seen by a submarine.

Experiments made with a pipe filled with very small tubes, lampblacket inside, with a filament lamp in the center, proved that on the darkest night no light was visible from a height 28 feet above the water when the tubes were 40 feet, but this only took care of the rolling of the ship and did not provide for pitching. It is only by the use of a gyroscope that the light may be seen in every direction by observers up, say, 50 feet above the water line and not by an observer 28 feet about water line which is the supposed limit for submarines.

There is considerable difficulty in getting the lamps to function properly, but I think the Italians can make a success of it.

As soon as the model arrives, I shall experiment with it and let them know, but they should not wait for me as I am very busy on other things.

Yours very truly,

A.

[ATTACHMENT/ENCLOSURE]

Mrs. Graham Edgar
Technical Assistant
Research Information Committee
of National Research Council
1023 Sébastopol St.
Washington, D.C.

Dear Sir:

The cablegram of June 11th
stating that information is desired
by the Italian Government regarding
Edison system of signalling at sea
mainly to submarines has been
shown to me by Mr. J. E. Edwards
that the following shall be
communicated to Dr. M. J. Durand,
the Scientific Attaché of the Committee
in Paris for transmission to the Italian Government

for me
The working model is being made
at the Key West Naval yard by
two mechanics from a submarine.
This model should have arrived
at Orange before this X
will communicate & find out
when it will probably
arrive -

The idea is to use ^{to me} ~~minimum~~ ^{size of}
~~discs~~ ³ discs ¹² inches ^{in diameter}
with one millimeter spaces
between ^{here discs} ~~states~~ the surfaces
being coated with ^{daily} ~~any~~ ^{thin} film
A small spiral filament
incandescent lamp at the
center send out two parallel
beams of light. The discs

[ATTACHMENT/ENCLOSURE]

Which one of Colunmn
are rotated by a small motor,
making 6000 Revolutions
per minute.

This lamp is placed as high
up on the mast as possible &
protected with a wind
sheet made of sheet
Cellophane held in a frame,
etc.

The lamp is thus kept
from all noise and damage
by taking off the top.

An addition has been
added ~~of~~ ^{consisting} of a Cup ~~containing~~
water & an electric
Contact so that in

Case of accident the
screen is cut out before
the beam of light reaches
such an angle that
it can be seen say
a Submariner.

Experiments made
with a pipe
filled with very ~~thin~~
small tubes, ~~lengthened~~
inside, with a filament
Lamp in center, proved that
on the darkest night ~~that~~
no light was visible from
a height 28 ft above the
water when the tubes
were 50 ft, but this
only took care of ~~the~~
of the ship & did not provide

[ATTACHMENT/ENCLOSURE]

4

for pitching. It is only by the use of a quonset pole that ~~passes~~ the light ~~may~~ be seen in every direction by observers up, say, 50 ft above the water line & not by an observer 28 ft about water line which is ^{the} supposed limit for successives -

¶ There is considerable difficulty we getting the Lancets to function properly but I think the Glazebus can make a success of it.

5

As soon as model arrives I shall experiment with it & let them know, but they should not wait for me as I am busy ~~now~~ on other things

[ATTACHMENT/ENCLOSURE]

ANSWER COPY

RS

Blue.

Paris.

Dated June 11, 1918.

Recd. 11, 11 p.m.

Secretary of State,
Washington, D. C.

4170, June 11, 6 p.m.

Eleventh, from Durand for Edgar, National Research Bureau.

"Information desired by Italian Government regarding Edison system
signaling sea invisible to submarines. Reported lamp with series
horizontal thin disc screens cut off light except at height equal
to sending station."

SHARP.

CSB

In graham Edgar
Mall Revenue Compt
1025 - 16th

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
CHAIRMAN.
BENJAMIN B. THOMAS,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

JUN 14 1918

To the Members of the Naval Consulting Board:

Please be advised that the next meeting
of the Naval Consulting Board will be held on
JUN 22 1918 in the Carnegie Institution, Wash-
ington, D. C.

The preliminary meeting begins at nine
o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS,

Secretary,

Per S.

WALTER DAVIDSON, PRES & GENL. MGR.
ARTHUR DAVIDSON, VICE PRES & SALES MGR.
WM. S. HARLEY, SECRETARY-TREASURER
WM. A. DAVIDSON, HOME MGR.

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CODES U.S.C. 1925 EDITION
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HARLEY-DAVIDSON MOTOR CO.

MILWAUKEE, U.S.A.



ALL AGREEMENTS ARE CONTINGENT UPON STRIKES, ACCIDENTS, DELAYS OF CARRIERS AND OTHER DELAYS UNFORSEEABLE OR BEYOND OUR CONTROL.

IN REPLY REFER TO DESK 53

June 15, 1918

Thomas A. Edison
c/o Laboratory
Orange, New Jersey

Attention: Mr. Meadowcroft.

Dear Sir:

Order #291270 for a complete motor and transmission has been entered and will be shipped to you today by Adams express prepaid. We are mailing you the blue prints of these assemblies under separate cover.

The motor and the transmission have each been carefully tested and are ready to run.

We thank you for the order, and hope that these parts will aid you in whatever work you are contemplating.

Yours very truly,

HARLEY-DAVIDSON MOTOR CO.
Parts & Accessories Sales

Mr. Brady
Please let me
know when it comes.
HD:D
W. A. Meadowcroft
6/17/18

June 17th 1918

Waddece.

Fuses

²
about 25. Time fuses.

Mk XI. W.N.Y. 1915
Lot. I. E.W.E. R.P.E.

about 25. Shrapnel Shells.

3" Shrap - Mk VIII.-

E.W.E.  R.P.E.

25- Precession cases for
3" Erhardt cases.

~~10 lbs gunpowder~~

- everfor.

D & M. sign'd
by Gunner

Armed



Delivered to:
SGLD-PG

Edison Laboratories
East Orange N J

CHARGE

TERMS: STRICTLY NET CASH

TERMS: STRICTLY NET CASH **CUSTOMER'S ORDER** **SHIPPED VIA**

INVOICE

LONG ISLAND CITY, N.Y.

A.O. 3591

19

ORDER DATE 6-18-18

DATE SHIPPED 6 18 18

191

TERMS: STRICTLY NET CASH **CUSTOMER'S ORDER** **SHIPPED VIA**

RECORDED Mr Plaintiff, **SHIPPED VIA** delivered

1 Chassis

MEMO INVOICE -

Freight
10 gal gas
1 gal oil
Tax

NO CHARGE

Motor No 268162B

Memo only.

"We, the undersigned, do hereby declare that the articles or commodities listed herein were produced or manufactured in accordance with the Federal Child Labor Act of September 1, 1916, and that at the time of removal from the place of manufacture, all children under the age of sixteen years were employed.

Chamber of Commerce

KEY WEST, FLA.

June 18, 1918.

No. 1
Mr. Thos. A. Edison,
Orange, N. J.

Dear Sir:-

Enclosed please find confirmation of telegram sent you
yesterday.

Our Chamber of Commerce believes that you must realize
the importance of Key West. If properly fortified and made
a First-Class Naval and Sub-Marine Base, its location would make
it the key to both of the entrances to the Gulf of Mexico. If
in the future, Naval battles should be fought for command of the
Gulf waters, this is the strategic point from which the ships of
our Navy would receive their supplies and the sole harbor that
would be available.

Having brought this matter to your attention, we feel
that you will do all in your power for a favorable consideration
in the house of the Senate Amendment, which we believe to be a
matter of importance to the entire Nation.

Most truly yours,

KEY WEST CHAMBER OF COMMERCE.

P.R. *Thos. A. Edison*
SECRETARY

CWC:BIT

[ATTACHMENT/ENCLOSURE]

X
Confirmation of Telegram

Key West, Fla., June 17th. 1912.

Thomas A. Edison, Sr.
Orlando, Fla.

Have noted in recent press reports here home conferees failure to concur in senate amendment to naval bill providing appropriation of two and one half millions for location of submarine base at Key West. This measure is one of vital importance to shipping of entire gulf or Mexico. ~~Therefore~~ your stay ~~and~~ past winter and spring enabled you make careful study of geographical and strategic location Key West as applied to commerce of gulf and caribbean. Elimination of this base will be serious mistake for all gulf trade can be controlled from Key West. Stop If not considered presumptuous may we request you write naval committee of house endorsing retention of item stating your reasons for so doing.

Chamber of Commerce of Key West.

Charge Chamber of Commerce of Key West.

A Copy of our Telegram to you this date, which is hereby Confirmed.

UNITED STATES NAVAL STATION
KEY WEST, FLA.

June 18, 1918.

My dear Mr. Edison:-

Replying to your letter of the 14th instant, per Mr. Hanford, concerning the work of the two electricians Payne and Gerbode.

Mr. Morgan reports to me that these men have been working whenever their other duties would permit. Recently the submarines have been quite active and, therefore, the men have not had as much time as they originally anticipated.

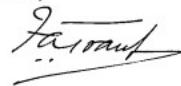
I enclose herewith, a copy of a report received from the men to-day, which outlines the progress they have made so far.

I have again directed Mr. Morgan to keep in close touch with this work and to inform me when it approaches completion.

Trusting that this is satisfactory, I am with great respect,

Sincerely yours,

Thomas A. Edison, Esq.,
Orange, N.J.



[ATTACHMENT/ENCLOSURE]

C O P Y.

U.S.S.K-3.
June 18, 1918.

From: P.D.Payne, A.G.Gerbode, U.S.N.
To: Commandant, U.S. Naval Station, Key West, Fla.
Subject: Report on experimental work for Thomas A. Edison.

1. Amount of material drawn by us to date: 12 lbs. aluminum ingot,
11 lbs. magnet wire.

Work received by us from machine shop(material drawn by machinists):
3 brass gyro wheels from rolled stock drilled and tapped for balancing
screws, 1 brass (cast) gimbal ring with 4 tapped stud holes, 1 cast iron
gimbal ring with 2 bearing steas and 2 tapped holes for studs, 2 iron
gimbal bars fitted with clamping screws and 2 tapped stud holes, 1 cold
rolled steel armature shaft with core and commutator fitted and trued,
100 copper washers, 1 counter weight from rolled brass fitted with 4
screws, 5 aluminum discs with grooves cut, 2 iron strengthening pieces
fitted to supporting frame, 2 iron brackets with set screws.

2. Since Mr/ Edison's departure we have done the following work on the
experiment: After trying out the new motor with gyro wheels we found
that the 5/16" shaft was too light, therefore, we installed a 25/64"
shaft which necessitated rebuilding and rewinding of armature, also the
installation of a new pair of bearings which we provided.
Upon completion of motor we proceeded to balance wheels statically and
dynamically. We then mounted the gyro element in the gimbals and noted
that the supporting frame was too springy and decided on reinforcing
same. In our original design of the inner gimbal we allowed 8 lbs
for the weight of light discs but after the discs were made as light
as practicable they were far in excess of this weight making it ne-
cessary to design a new gimbal. This gimbal is not completed but is
now being made. In our efforts to get the desired pendulous effect
we found it necessary to have a counter weight made to mount on the
motor as we did not have clearance enough in supporting frame to
allow of lowering motor the proper distance. The glass bulb with
copper contacts, for automatically turning out the light in case of
trouble in mechanism, which Mr. Hayes had blown for us, came to us
broken and we have yet to construct a new one, the material for which
we have.

3. Owing to war conditions it is not practicable for us to make an
estimate on the length of time required to finish this machine. The
greatest delay so far has been caused by our trips to see and as we
cannot foresee those trips it is impossible to say even approximately
when the model will be completed. However, we will say that, barring
such interruptions, we can probably turn the finished machine over to
Mr. Edison three weeks from date.

Respectfully submitted,

(SIGNED) P.D.PAYNE.

" U. G. GERBODE.

June 19, 1918.

Dear Admiral W. Strother Smith, U. S. N.,
Navy Department,
Washington, D. C.

My dear Admiral:

Allow me to hand you herewith our
Laboratory bill for experimental work done by Mr.
Edison covering a period, March 31st, 1918, to June
17th, 1918, at cost, amounting to \$16,491.03. This
bill is sent to you in duplicate, certified to by
Mr. Edison.

When the check is ready, you can forward
it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

June 19, 1918.

Hon. Benedict Crowell,
Assistant Secretary of War,
Washington, D. C.

Dear Mr. Secretary:

Allow me to hand you herewith
our laboratory bill for experimental work done by
Mr. Edison covering a period, March 31st, 1918, to
June 17, 1918, at cost, amounting to \$2,874.31. This
bill is sent to you in duplicate, certified to by
Mr. Edison.

When the check is ready, you can forward it
to me as usual.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

NAVAL CONSULTING BOARD

THOMAS A. EDISON, ^{PRESIDENT.}
WILLIAM L. SAUNDERS, ^{VICE-PRESIDENT.}
BENJAMIN D. THAYER, ^{VICE-PRESIDENT.}
THOMAS ROBINSON, ^{SECRETARY.}

OF THE UNITED STATES
OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

G
June 19, 1918.

To the Members of the Laboratory Committee
of the Naval Consulting Board:

The following minutes of a meeting of the Laboratory Committee, held on June 8, 1918, before the regular meeting of the Board, are sent you in accordance with Mr. Saunders' instructions:

A meeting of the Laboratory Committee was held on June 8, 1918, previous to the regular meeting of the Board.

Those present were Messrs. Brunton, Saunders, Whitney, Baekeland, Hunt, Sperry, and Woodward. Mr. C. H. Condict was also present.

The report of Mr. Condict dated June 1st was submitted to the Committee and it was unanimously agreed:

1. That a clause be inserted in the report calling attention to the fact that this is the beginning only of a laboratory and that further appropriations will be required;

2. That the list of suggestions for preliminary development and investigation, pages 17, 18 and 19 of the report, be omitted for the present and a statement substituted that a list of problems and investigations which might be worked out in this laboratory is in the course of preparation and will be transmitted later. In the meantime the Laboratory Committee will ask each member of the Board to make suggestions as to these problems.

With the foregoing amendments, the report was unanimously adopted by the Committee and presented to the Board as a whole for approval.

Respectfully,

G. C. Treffry Jr.
Ass't to the Secretary.

Juno 20, 1918.

Mr. H. C. Rizer, Chief Clerk,
Department of the Interior,
United States Geological Survey,
Washington, D. C.

Dear Mr. Rizer:

I am going to trouble you even more
by asking you to send for Mr. Edison, two topographic
sheets covering a small section of the shore line of
New Jersey, namely, the Whitinge sheet and the Barnegat
sheet. Mr. Edison desires these in connection with
his experiments for the Government.

Yours very truly,

Assistant to Mr. Edison.

A/5335.

June 20, 1918.

Henderson Motor Cycle Co.
Detroit, Mich.

Gentlemen:

Possibly you may be aware of the fact that I have been engaged on special experiments for our Government for the last year and a half. In one of these experiments upon which I am not working, I would like to use one of your four cylinder engines, the new model having large displacement, complete with transmission, gasoline tank, pipe connections, etc., such as you furnish with your motor cycles.

Would you be willing to furnish to me one of these power plants separately for use in this special Government work? It would be a great accomodation to the Government and to me.

If your answer is in the affirmative, will you kindly let me know the price and how soon you can make delivery (the sooner the better), and I will have the regular Purchase Order issued by my Purchasing Department.

Yours very truly,

A/5330.

ADDRESS ALL COMMUNICATIONS TO
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.

PLEASE REFER TO FILE
NO.

SHIP PROTECTION COMMITTEE
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.
ROOM 413, PLANT BUILDING

June 20th, 1918.

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, New Jersey.

My dear Mr. Edison:

I wish to thank you for yours of June 12th. You state that you will make a demonstration of the sea anchors, providing the Shipping Board will let you use, for one day, a cargo boat as she goes out.

Will you take this up directly with the Shipping Board yourself, or would you like to have me do so through our committee? If the latter, please let me know about what size boat you would prefer, and at what point you would like to make the demonstration, and as nearly as you can, the date when you would want such boat.

Yours very truly,

A. M. Street

Member
SHIP PROTECTION COMMITTEE
UNITED STATES SHIPPING BOARD

AMH/RL

Any Cargo Boat with 4000 ton loaded
which is proceeding to sea ~~to~~
via Sandy Hook, going to Europe or
Coastwise I can peculiarly make
test in 1/6 hours then she can

proceed. - In some cases I believe
Cargo boats anchor under hook
& wait for orders, any one
of these boats could go out on
fishing banks make test
& return to anchorage at
the Hook



June 21, 1918.

Mr. A. H. Hunt, Member,
Ship Protection Committee,
United States Shipping Board,
New London, Conn.

Dear Mr. Hunt:

I have received your note of the 20th instant, and believe that we can probably make more progress through your Committee than I could otherwise do in arranging for the use of a cargo boat at the goes out.

I could use any cargo boat, loaded with say, about 4,000 tons, which is proceeding to sea via Sandy Hook, going to Europe or sailing Country. Probably I can make the test in about six hours, and then she can proceed.

I believe that in some cases cargo boats anchor inside of the Hook and wait for orders. Any one of these boats could go out as far as the Fishing Banks and make the test, returning to anchor at the Hook.

Yours very truly,

A/5336.

Juno 24, 1918.

Harley-Davidson Motor Co.,
2800 Chestnut Street,
Milwaukee, Wis.

Gentlemen:

Referring to our previous correspondence regarding one of your power plants and transmission complete, which you have already forwarded, Mr. Edison now desires me to request that you ship him at once, one engine sprocket with belt pulley especially designed for Spillendorf Generator; Engine Model 18 F.

Will you, therefore, kindly enter our order immediately for this, and as soon as I hear from you as to price I will have our Purchasing Department send the necessary Purchase Order to cover.

Prompt delivery to Mr. Edison of this engine sprocket, etc. will be facilitated by addressing memo in my care.

Yours very truly,

Assistant to Mr. Edison.

A/

June 24, 1918.

General J. Franklin Bell,
Commanding Officer,
Camp Upton,
Inham, N.Y.

Sir:

This will introduce my son, Theodore Edison. He
is doing some work for Secretary Baker, and desires
to get some actual data on Trenches, Barrage and Mortar
firing.

Commanding him to your courtesy, I am,

Respectfully yours,

A.

EXCELSIOR MOTOR MFG. & SUPPLY CO.

EXCELSIOR AUTO-CYCLES

THE HENDERSON FOUR



CHICAGO, ILL.

June 24, 1918.

Thomas A. Edison,
Orange, N. J.

Dear Sir:

In reply to your letter of June 20th, addressed to the Henderson Motorcycle Co. of Detroit, Mich.:

You will note by the stationery on which this letter is written that HENDERSON motorcycles are now manufactured by us.

We take pleasure in quoting you a price of \$225.00 on the new HENDERSON motor with 70-inch displacement, complete with transmission, gasoline tank, pipe connections, etc.

Upon receipt of your regular purchase order, we will instruct our Production Department to pick an especially good motor for you and to ship immediately.

Yours very truly,

EXCELSIOR MOTOR MFG. & SUPPLY CO.

D.W. Henderson
Manager of Sales.

5358

Mrs. Edison

TWH
J

*M. Meadowcroft: Please order this motor as per specification in paragraph three. Charge \$2 5746
S. Stewart.*

N. Ord. 8

IN REPLY ADDRESS
BUREAU OF ORDNANCE, NAVY DEPARTMENT
AND REFER TO NO.

34120/266 (Q1)
FF

NAVY DEPARTMENT
BUREAU OF ORDNANCE
WASHINGTON, D. C.

Bureau

Subject: Shipment of Shrapnel Shell.

Sir:

The Bureau understands that you have requested from Lieutenant Commander R. W. Clark, New York Navy Yard,

25 3" Shrapnel
and
25 Time Fuses

for use in certain experimental work.

The Bureau has directed the shipment to you of this material from the Naval Ammunition Depot, Bronx Island, N.Y.

|| The Bureau requests information at your convenience as to the purpose for which these shell will be used, and as to the progress of such tests as you conduct therewith.

Respectfully,

T. Edison
Lieutenant Commander U.S.N.
By direction of Chief of Bureau.

Mr. Thomas A. Edison,
West Orange, N.J.

wanted for experiments
on smoke producing
shells — S

ADDRESS ALL COMMUNICATIONS TO
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.

SHIP PROTECTION COMMITTEE
UNITED STATES SHIPPING BOARD
NEW LONDON, CONN.
ROOM 412, PLANT BUILDING

PLEASE REFER TO FILE
NO. *H*

June 25th, 1918.

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, New Jersey.

Dear Mr. Edison:

I am in receipt of yours of June 21st
stating that you think probably our commit-
tee can make more progress than yourself in
getting the use of a cargo boat to try out
your sea anchor.

You do not state in your letter what
date you would like to make such test, and
I shall call up Mr. Meadowcroft on Thursday
of this week from my New York office, and
get this information.

I rather expect to go to Washington for
Saturday of this week at which time I shall
take the matter up and try to get the arrange-
ments made.

Yours very truly,

A. M. Smith

Member.
SHIP PROTECTION COMMITTEE
UNITED STATES SHIPPING BOARD.

AMH/RL

5353

4

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT
WASHINGTON

WSS WSS/VR

June 25, 1916.

My dear Mr. Edison:

I enclose you correspondence on the subject of the experiment of Mr. Bruce R. Silver, who is one of your assistants and is now engaged in work in conjunction with Dr. Walter T. Scheele.

Will you please carry Mr. Silver as you have heretofore done and render his accounts as an experiment carried on by you?

Kindly return the correspondence for my files.

Sincerely yours,

Jacobus Dugay

Mr. Thomas A. Edison,
Edison Laboratory,
Orange, N. J.

5367

WAR DEPARTMENT.
WASHINGTON.

June 25, 1918.

My dear Colonel Phillips:

This will introduce to you Mr. Thomas A. Edison. I would like to ask that he be admitted to the Proving Grounds and that you extend to him any courtesies that are possible and proper. Probably he will be accompanied by Mr. Theodore Edison, for whom I am writing a similar letter.

Cordially yours,

Newton D. Baker
NEWTON D. BAKER
Secretary of War.

Colonel William A. Phillips.

Aberdeen Proving Grounds, Md.

rd

WAR DEPARTMENT,
WASHINGTON.

June 25, 1918.

My dear Colonel Phillips:

This will introduce Mr. Theodore Edison, son of Mr. Thomas A. Edison. I would ask that he be extended the courtesies of the post.

Cordially yours,

Newton D. Baker
NEWTON D. BAKER
Secretary of War.

Colonel William A. Phillips,
Aberdeen Proving Grounds, Md.

rd

June 26, 1918.

Mr. A. M. Hunt,
55 Liberty Street,
New York, N.Y.

Dear Mr. Hunt;

Your favor of the 26th instant to Mr. Edison has been received and shown to him on his return to the laboratory this afternoon. He is quite busy, and has asked me to reply for him.

He says that just at this time he cannot mention a definite date on which he would like to make the test, but that his boat will be in the neighborhood of Sandy Hook practically all the time, and the Captain is the one who would superintend the test. There will be some little work in preparation before the test can be made.

Inasmuch as there are usually several cargo boats at anchor in the Harbor, waiting for convoys, Mr. Edison thinks that possibly you might be able to get an open permission to take one of those boats out as far as the Fishing Banks for the test, after which she could return to her anchorage in the Harbor and wait for a convoy.

If this can be done, it would be the most convenient way of arranging the matter.

Yours very truly,

Assistant to Mr. Edison.

A/5353.

Juno 16, 1918.

Excelsior Motor Mfg. & Supply Co.,
3730 Cortland Street,
Chicago, Ill.

Gentlemen: Attn: Mr. E. L. Henderson, Mgr. of Sales:

Your favor of the 14th instant has been received. We thank you for your prompt reply to our letter and also for your quotation on a net Henderson motor with 70-inch displacement, complete with transmission, gasoline tank, pipe connections, etc.

Herewith you will find our regular Purchase Order for the same and you will note that the shipment is to be addressed:

{ Laboratory of Thos. A. Edison.
{ Orange, New Jersey.
{ Attn: Mr. Meadowcroft.

Kindly be sure to have our packer mark this accordingly.

Yours very truly,

Assistant to Mr. Edison.

A/6358.

Enclosure.

June 27, 1918.

Hon. Newton D. Baker,
The Secretary of War,
Washington, D. C.

Dear Mr. Baker:

We are preparing now for some practical trials of the device invented by my son Theodore, and expect to go down to the Aberdeen Proving Grounds in the near future.

One of the items in our program will be the exploding of bombs containing rather large quantities of T. N. T. I find upon inquiry that these bombs can be loaded with T. N. T. at the Picatinny Arsenal and that they can be shipped thence to the Proving Grounds at Aberdeen.

It will be necessary, however, for the Commanding Officer at Picatinny to have authorization to load and ship such bombs.

I shall be glad, therefore, if you will kindly have the necessary authorization forwarded at once to Picatinny Arsenal to load the following and to ship the same to the Proving Grounds at Aberdeen for our use, namely, - load one bomb or drum with 355 pounds of TNT
" " " " " 175 " " "
" two bombs " drums " 60 " " " each.

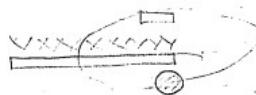
As there is good reason for proceeding with these experiments with the least possible delay, may I suggest that this authorization be issued as soon as possible.

Yours very truly,

A/US64.

[ATTACHMENT/ENCLOSURE]

$$\begin{array}{r} 8 \times 30 = 325 \text{ lbs.} \\ 8 \times 22 = 176 \text{ lbs.} \\ 4 \times 18. = 60 \text{ lbs.} \end{array}$$



June 27, 1918.

Subject: Shipment of Shrapnel Shell.
From: Thomas A. Edison, Orange, N.J.
To: Lieut. Col. T. S. Wilkinson, U. S. M.,
Bureau of Ordnance, Washington, D.C.

Sir:-

I am in receipt of your favor of the 25th inst., reference 34120/466 (Q1), in regard to the shipment to me of 25 3" Shrapnel and 25 Time Fuses for use in certain experimental work, and thank you therefore.

In reply to your request for information as to the purpose for which these shells will be used, let me say that I desire to have them for experiments on smoke producing shells.

Respectfully yours,

A/5368.

P
June 27, 1918.

Col. Wm. A. Phillips,
Aberdeen Proving Grounds,
Aberdeen, Md.

Dear Sir:-

I did not have the pleasure of meeting you on a visit which I made to the Proving Grounds recently in company with my son Theodore. We met Captain Loosie, and explained the nature of our visit, and received very courteous attention from him.

Captain Loosie has probably explained to you that my son Theodore has developed an invention which is likely to be useful in many operations, and that Secretary Baker has authorized the use of a small piece of the Aberdeen property for further and final development. We are hoping to go down to Aberdeen in a week or ten days to proceed with this work, and Secretary Baker has given us letters of introduction to you.

A preliminary part of our program will be a study of the effects of explosion of four bombs filled with T. N. T., and I am now writing to ask whether your range is large enough to provide for the discharge of the following bombs:

| |
|--|
| One bomb or drum with 325 pounds of T. N. T. |
| " " " " 175 " " " |
| Two bombs " drums " 60 " " each. |

I have asked Secretary Baker to authorize the Picatinny Arsenal to fill these bombs of T. N. T., and if I hear from you that you can afford facilities for the detonation of these bombs, I will ask that they be forwarded direct to you. No gun will be required. He explained the matter to Captain Loosie, and I think you will find that he understands the details of our proposition.

At the place where the bombs will be exploded, we would like to have two trenches built, with the regular wire entanglements, as shown in the sketch sent you herewith. The trenches should be of the regulation type, with the walls reinforced by logs or timbers.

Let me add that it is not expected that the bombs shall be exploded on that section of the Proving Grounds which has been picked out as a location for the final development of the invention in question.

I shall be glad to hear from you at your early convenience on this matter.

Respectfully yours,

A/4366.

June 28, 1918.

Information Section,
War Department,
Room 2 - 225,
6th and B Streets,
Washington, D.C.

Gentlemen:

I would like to receive the "Ordnance
Bulletin of Information". I understand it is
published weekly. Will you kindly put my name
on your list, and address the bulletins, Thomas A.
Edison, Orange, N.J., Private and Personal.

Yours very truly,

A/1374.

[ATTACHMENT/ENCLOSURE]

Mr Edison:

The attached may
prove of interest to you.

I get them regularly.

If you want them you can
have them mailed to you weekly
by addressing Information
Section, War Dept -
Room 2-223 Group B,
6th & B Sts
Wash. D.C.

Hatch.

5374

Meadcroft have
them sent to Mr.
Addressed personal
to C. G.

P

June 28, 1918.

Commanding Officer,
Picatinny Arsenal,
Dover, N.J.

Dear Sir:-

I telephoned to you in behalf of Mr. Edison a few days ago asking whether you could load certain shells or drums with T. N. T. for an experiments which Mr. Edison is conducting at the request of Secretary Baker. You said that you could do this, but that you would have to have the necessary authorization from Washington. Mr. Edison has written for this authorization, which will probably be received within the next two or three days.

In the meantime, Mr. Edison thinks it is desirable to forward the shells or drums to you so that they will be on hand when the authorization is received. Those will be delivered to you, herewith, and the bearer will be able to explain to you just what is desired.

Yours very truly,

Assistant to Mr. Edison.

A.

U. S. SHIPPING BOARD BUILDING
319 F STREET NW.

UNITED STATES SHIPPING BOARD
EMERGENCY FLEET CORPORATION
WASHINGTON

June 28, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

Dear Mr. Edison:

I enclose copy of a letter signed by Mr. John A. Donald, Member of the United States Shipping Board in relation to test of the sea anchor.

I hope this will bring about the desired results. If I do not hear anything from it in the near future, I shall stir the matter up again.

Yours sincerely,

A. M. Smith,

Member, Ship Protection Committee.

Enclosure.

AMH:CMF

[ATTACHMENT/ENCLOSURE]

June 26, 1916.

Mr. E. F. Carry,
Director of Operations,
U. S. Shipping Board,
Washington, D. C.

Dear Sir:

Mr. Thomas A. Edison has developed a sea anchor to be used in rapid turning of vessels to avoid torpedoes when notice of their approach is given by indicating devices.

He is desirous of having a boat of this sea anchor made on a vessel of about four to five thousand tons loaded displacement.

This matter is considered of sufficient importance to justify prompt and energetic action to have the test carried out.

The following is a quotation from a letter of Mr. Edison's Assistant to Mr. A. M. Hume of the Ship Protection Committee, who has been following this matter up with Mr. Edison.

"Mr. Edison says that just at this time he cannot mention a definite date on which he would like to make the test, but that his boat will be in the neighborhood of Sandy Hook practically all the time, and the Captain is the one who would superintend the test. There will be some little work in preparation before the test can be made.

Inasmuch as there are usually several cargo boats at anchor in the Harbor, waiting for convoys, Mr. Edison thinks that possibly you might be able to get an open permission to take one of these boats out as far as the Fishing Banks for the test, after which she could return to her anchorage in the Harbor and wait for a convoy."

Please take the necessary steps so that this test can be arranged for. I suggest that you have the New York office get in touch with Mr. Edison without delay, ascertain exactly what is needed, and have that office co-operate with him to the end that the test he desires can be made as soon as possible.

Please have the Ship Protection Committee advised of all

[ATTACHMENT/ENCLOSURE]

E. F. C. 2

steps taken, and send copies of all information to A. M. Hunt, 55
Liberty Street, New York City.

Very truly yours,
(Signed) JOHN A. DONALD.
Commissioner, U. S. Shipping Board.

AMH/LH.

John A. Donald

// Mr. Edison's comments on N.C.B.
Report of Committee on Laboratory Site.

I entirely disagree with the report of a majority
of the Committee in almost every instance. Their idea of
the character of the Laboratory is quite different from that
which I have always considered.

The Government already has a Research Laboratory
in the Bureau of Standards, where there is plenty of ground
and a fine working force capable of unlimited extension.

The Government also has a Testing Laboratory at
Annapolis, where efficiency, constants and effectiveness of
Naval Machinery can be and already are tested. There are
other Research Laboratories connected with the various Bureaus.

The Government has no Laboratory arranged on special

lines, whereby ideas, suggestions and adaptations of the latest discoveries or inventions can be carried out, constructed and tested with great rapidity. Such a Laboratory need not do any extensive research work for the reason that in 95% of the cases the work will be done under known facts, (of which there is an almost unlimited number ready to be used) without the necessity of deep scientific research.

This Laboratory should be operated on a War-time basis where extreme rapidity of construction of the various apparatus and devices and the testing of the same form the only excuse for its construction.

The long and necessary delays in the usual Research Laboratories should be divorced from a Laboratory of this character. Such research work can be done elsewhere, (1)

at the Bureau of Standards (2) at other Government Research Laboratories, and (3) through special business arrangements
and Colleges
with many of the large Companies having Research Laboratories.

while Annapolis might be a good place for a Research Laboratory of the usual type, it would be totally unfit for a practical Experimenting Laboratory constructed and operated on the lines which I have imagined. Such a Laboratory as last mentioned, to be successful, should be as near New York City as possible, (1) in order that materials can be obtained quickly (2) where the business heads of the principal industries reside, and (3) from whom rapid action is obtainable.

The only site near enough to New York City (1) where

no interference is possible, (2) where there is already a Proving-ground, (3) where unlimited land is obtainable, (4) where secrecy is easily secured, (5) where Hydro-Aero-planes and Submarines can be operated and tested under actual conditions, is the site covering 1500 acres at Sandy Hook, already owned by the Government, and not one-third of which is now being utilized. Sandy Hook is 2-1/2 hours distant by Railroad and one hour by Motor Boat. Two Street Car Lines, 1 Steamboat Line and 1 Railroad Line touch one end of the Hook, and there is a large number of villages adjacent thereto.

The money already appropriated will make a good start, and should this proposed laboratory make good, Congress will undoubtedly appropriate more.

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
July 1918**

All communications should be addressed to "The Chief of Ordnance, U. S. Army, Washington, D. C."

HD/ems

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON

W

July 1, 1918.

In replying refer to No.

Mr. Thomas A. Edison,
ORANGE, New Jersey.

My dear Sir:-

I am directed by the Acting Chief of Ordnance
to acknowledge the receipt of your letter of June 28th, and
to advise you that your name has been placed on the list to
receive copies of the Bulletin addressed in accordance with
your instructions.

Respectfully,

H. E. ATTERBURY
Major, Ord. R. C.
E. H. B.

(Signature)

EXPERIMENTAL AND DEVELOPMENT ENGINEERING SERVICE
LABORATORY OF THOMAS A. EDISON.

TO: Mr. W. H. Meadowcroft
SUBJECT: Laboratory equipment
REFER TO: _____
FROM: John P. Constable

REFER TO MEMO, # A3-
DATE: July 2nd, 1918

Referring to our conversation on the subject of new machinery, which I feel is necessary for the completion of the Laboratory equipment, would you be kind enough to draft me up a letter to the Secretary of the Navy which I can take to Mr. Edison for signature.

What we wish is for Mr. Edison to ask the Secretary of the Navy, who would be kind enough to ask the Priorities Committee, to grant Mr. Edison priority for the obtaining of the following list.

From Brown & Sharpe Manufacturing Co., Providence, R. I.

- 1 - #3 Brown and Sharpe Cutter and Beamer Grinder,
- 1 - #2 Surface Grinder,
- 1 - Magnetic Chuck,
- 1 - Universal Grinder.

From the Hendy Machine Co., Torrington, Conn.

- 1 - 14" x 6" Engine Lathe,
- 1 set of chuck - 1/8 to 5/8".
- 1 - #2 B Hendy Milling machine.

The approval for this equipment has been passed by the Laboratory Executive Committee and I have placed requisitions for same but am unable to get delivery promises better than October and December of this year, and March of 1919.

This equipment is necessary in order that the Laboratory may be reasonably equipped to handle the general class of work which we do, and as you will note comprises almost all precision machinery of which we are very weak at the present time.

If you will kindly do this for me as soon as possible I will be greatly obliged.

JPC:GAF

Copies to: file:

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
CHAIRMAN.
BENJAMIN S. THAYER,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

July 2, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

This is to advise you that as decided at the last meeting, Mr. Saunders has arranged with the American International Corporation for the Board to visit the shipbuilding plant at Hog Island on Friday, July 12th. It is expected that a meeting of the Board will be held during this visit.

The members of the Board will meet in the lobby of the Bellevue-Stratford Hotel, Philadelphia, on the arrival of the Pennsylvania train leaving New York at eight A.M. The Secretary of the Navy intends to make this visit with the Board.

The American International Corporation asks particularly that it be advised as soon as possible of the number and the names of those who will visit Hog Island. I would therefore request that you advise me of your intentions by means of the enclosed blank.

A later notice will be issued covering further details.

Yours very truly,

Thomas Robins
per G. J.

TR/gt

Cable Address "Edison, New York"

From the Laboratory
of
Thomas A. Edison,
Orange, N.J.
July 3, 1918.

Priorities Committee,
Washington, D.C.

Gentlemen:

Possibly you may be aware of the fact that for the last eighteen months I have been conducting a series of experiments for our Government at the request of the Secretary of the Navy.

In carrying out these experiments I have used all the resources of my laboratory, including the two machine shops which form part thereof. This experimental work would be much facilitated if I could obtain without delay some additional equipment in the line of machinery, but in shopping around to purchase same the best promise of delivery I can get is from four to nine months.

The blank applications for priority furnished by your Committees do not provide for a case of this kind, as they are intended to cover cases where the applicant is manufacturing specific articles for the Government on a commercial basis. While my work is for the Government it is of an experimental nature and cannot be described as called for on your experimental blanks, it is such that the benefit of a priority orders might very well be extended.

The following is a list of the equipment I desire:

From Brown & Sharpe Manufacturing Co., Providence, R. I.

- 1 - #3 Brown and Sharpe Cutter and Reamer Grinder,
- 1 - #2 Surface Grinder,
- 1 - Magnetic Chuck,
- 1 - Universal Grinder,

From the Hendy Machine Co., Torrington, Conn.

- 1 - 14" x 6" Engine Lathe,
- 1 set of chucks - 1/8 to 5/8".
- 1 - #2 Hendy Milling machine.

I trust your Committee may see its way clear to
issue the necessary priority orders in these circumstances.

Respectfully yours,

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON
WILLIAM L. SAUNDERS,
BENJAMIN D. THAYER,
THOMAS RODIN,
VICE CHAIRMAN,
SECRETARY.

OFFICE OF
A. M. HUNT
55 LIBERTY STREET
NEW YORK

Hunt

July 3rd, 1918.

Mr. Thos. A. Edison,
Orange, N.J.

Dear Mr. Edison:-

I am enclosing copies of two letters from Mr. Mallory, Assistant to Director of Operations, who was instructed at a recent meeting in Washington of the Ship Protection Committee, to take steps to make available a vessel for tests of the sea anchor, and also carbon copy of letter which I have written this day to Captain Yates, Managing Agent of the U. S. Shipping Board in New York City.

I am spending most of my time now in New London and would be glad to have you keep me advised, by letter through my office in New York whether or not steps satisfactory to you are taken in the matter.

Yours very truly,

A. M. Hunt

AMH-H.

7/14 " Sett - Assistant
to Capt. Yates -
Broad 7360

[ATTACHMENT/ENCLOSURE]

- C O P Y -

July 2nd, 1916.

Commissioner Donald,
U. S. Shipping Board,
Washington, D. C.

Dear Sir:-

SEA ANCHOR.

I beg to acknowledge receipt of your letter of June 28th with reference to sea anchor developed by Mr. Thomas A. Edison, to be used in the rapid turning of vessels.

In accordance with your instructions, I am arranging with Capt. Yates to get in touch with Mr. Edison and make the necessary arrangements.

I presume it will not be necessary to make any extensive alterations in the vessel which would require a loss of time. However, we will see that the tests are made and report to the Ship Protection Committee all steps that are taken.

A copy of this letter goes to Mr. A. H. Hunt, 55 Liberty St., New York, for his information, as well as copy of letter I am addressing Capt. Yates.

Yours very truly,

(Signed) C. D. Mallory

Assistant to Director of Operations.

[ATTACHMENT/ENCLOSURE]

C O P Y .

July 2d, 1918.

Capt. Yates, Manager Agent,
U. S. Shipping Board,
Custom House, New York.

Dear Sir:-

SEA ANCHOR.

The Ship Protection Committee, through its Chairman, Commissioner Donald, has requested that Mr. Thos. A. Edison be given an opportunity to demonstrate and test a sea anchor which he has developed, and which is to be used in rapid turning of vessels to avoid torpedoes.

It is suggested that a steamer awaiting convoy in New York be utilized for this purpose, and you will please arrange to immediately get in touch with Mr. A. M. Hunt, 55 Liberty St., New York, representing the Ship Protection Committee, and also Mr. Edison. Mr. Hunt can probably arrange this for you.

Please advise Mr. Hunt of any action you take in this matter, also keep me fully informed so that the Ship Protection Committee here may be advised.

Yours very truly,

(Signed) G. D. Mallory.

Asst. to Director of Operations.

[ATTACHMENT/ENCLOSURE]

July 3rd, 1918.

Capt. Chas. Yates, Managing Agent,
U. S. Shipping Board,
Custom House,
New York City.

Dear Sir:-

I am in receipt of a copy of a letter addressed to you under date of July 2nd by C. D. Mallory, Assistant to Director of Operations, in relation to test of Sea Anchor developed by Mr. Edison, in which you are asked to get in touch with me and also with Mr. Edison.

I am in New London most of the time on experimental work and it is probable that you will find my absent from the city. I would suggest that you call up Mr. Meadowcroft, Mr. Edison's personal assistant, through the New York office of the Thos. A. Edison, Inc., Cortlandt 8546, and take up the matter with him.

I am sending Mr. Edison a carbon copy of this letter to you and also of the letter addressed to you by Mr. Mallory, so that he will be fully informed of the situation in case you should call up. I am suggesting that you call up Mr. Meadowcroft rather than Mr. Edison on account of the latter's difficulty in hearing.

Yours very truly,

Member "Ship Protection Committee"
United States Shipping Board.

AMH-H.

Copy to Mr. Thos. A. Edison,
Orange, N. J.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON, President
WILLIAM L. SAUNDERS, Vice President
BENJAMIN B. THAYER, Vice Chairman
THOMAS ROBBINS, Secretary

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

July 3, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The Standard Aircraft Corporation has just telephoned to this office inviting every member of our Board to visit its works at Elizabeth, N.J., on Saturday, July 6, in order to witness demonstration flights of the first Handley Page and Caproni aeroplanes equipped with Liberty engines.

The Handley Page will be driven by two 400 H.P. Liberty motors and the Caproni by three motors of the same type.

The Standard Aircraft Corporation will have busses at the Elizabeth Station to meet the Central Railroad of New Jersey train which leaves Liberty Street, New York, at 11 A.M., and West 23rd Street at 10.50. They will also provide us with lunch and a room in which to hold a meeting.

The flight itself will not take place until three P.M.

If you have not already advised me of your intentions, kindly do so at once by telegraph in order that I may notify the Standard Aircraft Corporation of the number to be provided for.

Mr. Coffin telegraphs that he will attend this meeting and adds, "Believe you should arrange to have Board meeting at Elizabeth, as this event will be a historic one in American aeronautic development".

The Chairman of the Board, acting on the authority given him at the last meeting, has called a special meeting for next Saturday, to be held at the works of the Standard Aircraft Corporation, Elizabeth, N.J., some time during our visit.

Very truly yours,

Thomas Robbins, Secretary.

TR/gt

July 6, 1918.

Mr. A. M. Hunt,
65 Liberty Street,
New York, N.Y.

Dear Mr. Hunt:

Mr. Edison wishes me to acknowledge the receipt of your favor of the 3d instant enclosing copies of two letters from Mr. Mallory, Assistant to Director of Operations, and also carbon copy of a letter which you wrote to Captain Yates, and to thank you for your kind attention in this matter.

We will advise you later as to the progress we make in connection with this tact.

Yours very truly,

Assistant to Mr. Edison.

A/4408.

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON
PRESIDENT
WILLIAM L. SAUER
Vice President
BENJAMIN S. THAYER
Treas. Chairman
THOMAS RORING
Secretary

OFFICE OF THE CHAIRMAN
11 BROADWAY, NEW YORK

July 8, 1915.

Thomas A. Edison, Esq.,
Orange, N.J.

Dear Mr. Edison:-

As a Director of the American International Corporation, and member of the Naval Consulting Board, I am earnestly hoping that you will join our party which goes to Hog Island next Friday, the 12th inst.

The Secretary of the Navy assures me that he will be present with some members of his staff.

We are to meet at the Bellevue-Stratford Hotel, Philadelphia, about 10:30 Friday morning. The 8 o'clock train from New York will take us to Philadelphia on the morning of the visit. You can return on the 4 or 6 o'clock afternoon train from Philadelphia to New York the same day.

I do not think the journey will be fatiguing because we go from the Bellevue-Stratford by automobile to Hog Island, and all over Hog Island by automobiles. The roads cover the plant.

It is not like inspecting a work shop, where one has to walk about and look into details. The main thing about Hog Island is the tout en ensemble. We shall probably go from the automobile to a boat on the River so as to see the ways, which stretch for a little over a mile along the banks of the Delaware.

Luncheon will be served at Hog Island.

This, as you know, is the greatest fabricating shipbuilding plant in the world. Beginning next month, or soon thereafter, it is expected that a ship of about 7500 tons will be launched there every other day.

I earnestly hope that you will be with us. Bring your Secretary, or any one else, along if you wish.

Please let me know if we may expect you.

Cordially yours,

W. J. Saunders

ESW: 73

Mr. W. L. Saunders,
Chairman, Naval Consulting Board,
11 Broadway,
New York, N.Y.

Dear Mr. Saunders:

Your letter to Mr. Edison of yesterday's date in reference to the visit to Hog Island next Friday was received and shown to him this morning.

He wished me to express his regret that he will be unable to join you on this visit as he is busy on some very important experiments which he cannot leave, even for a day.

He is back at his old trick of working until two or three o'clock in the morning and seems to be quite happy about it.

Yours very truly,

Assistant to Mr. Edison.

A/5422.

H. W. TITMAN, PRES. & CHF.

Main Office: PITTSTON, PA.

H. C. HOOVER, SECRETARY

E. B. BRUMM, TREAS. & GEN. MGR.

Branch Office: MAHANOY CITY, PA.



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An independent Company in no way
connected with a trust
BOTH PHONES

For prompt attention address reply to

Pittston, Pa., July 10/18.

Mr. Wm. H. Meadowcroft,
Orange, N.J.

Dear Sir:

We delivered powder on Saturday by auto. We made inquiry from the Bureau of Explosives, which is connected with the Railroad company, concerning their willingness to accept these goods for shipment. They asked us a number of questions which we answered, but up to date have not received their reply, but presume that they will accept ~~the~~ shipments made of this material, if you should require more.

As this lot was for experimenting we put it up in two ways, that is, polished without any graphite, and the balance glazed. We think the glazed would cause a trifly more smoke and somewhat protect the goods from moisture.

If there is anything further that we can do in this matter, we will be pleased to do so.

We would thank you for the number of your license, which the government now requires from all manufacturers, vendors and investigators. We should have the number of your license on file in order to comply with the government requirements.

Thanking you for your attention to the matter, we are

Respectfully,

BLACK DIAMOND POWDER CO.,

E. B. Brumm G.R.

5435

July 12, 1918.

Thomson-Lovering Co.,
325 Arch Street,
Philadelphia, Pa.

Dear Sirs:

Referring to my conversation with your Mr. Thomson on the telephone this afternoon, I beg to advise you that Mr. Edison would like to have you go ahead and make up two of the line resistance boxes, each with a 30 mile capacity, in 16 divisions, two miles to a division. These are desired by him for a particular experiment for the Government which is very urgent, and delivery is desired as quickly as possible. I will mail you a Purchase Order covering the above tomorrow.

The numbers on the two boxes we have are as follows: 4602 and 4727. These numbers are at the upper part of the box, under the name. At the bottom of one of the boxes is the number 1104-C. There is no 2B or 2S on either. As these initials do not appear on either boxes, I will not ask the Western Electric Co. to authorize the making of these boxes until I hear from you. I shall be glad if you will kindly call me on the telephone tomorrow, 6800 Orange, if possible in the morning, and tell me whether you still desire the authority of the Western Electric Co. of New York.

In any event, I trust you will proceed immediately with the manufacture of these two resistance boxes.

Yours very truly,

Assistant to Mr. Edison.

A.

July 13, 1918.

Captain Bates,
Picatinny Arsenal,
Dover, N.J.

Dear Sir:-

Will you kindly deliver to bearer, who
will deliver same to the Aberdeen Proving Grounds,
the drums which you have had loaded for me, and
oblige,

Yours very truly,

A/5449.

July 18, 1918.

Captain Loomis,
Aberdeen Proving Grounds,
Aberdeen, Md.

Dear Sir:-

The bearer has the four iron drums containing
T. N. T. for our experiment, also three storage cells and
three short lengths of iron pipe. Will you please take
charge of these articles for us. The truckmen will dis-
pose of them as you may direct.

Yours very truly,

A/5450.

July 13, 1918.

Councilman W. F. Mehr,
West Orange, N.J.

Dear Mr. Mehr:

Mr. Edison is desirous of obtaining permission to carry on these premises such explosives as he requires in connection with the experiments that he is carrying on for our Government. These explosives would not be in large quantities, and would consist of gun powder, gun cotton and T. N. G.

Will you kindly make an application to the Council for issuance of such a permission.

Yours very truly,

Assistant to Mr. Edison.

A/5451.

TELEPHONE CONNECTIONS
BELL-MAIN 9-3754
KEYSTONE-MAIN 3754

CABLE ADDRESS "THILEVCO"
WESTERN UNION CODE

THOMPSON-LEVERING COMPANY

TESTING SETS
WHEATSTONE BRIDGES
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INDUCTANCE TESTERS
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ROTOMETERS
LABORATORY STANDARDS
OF PRECISION

ELECTRICAL MEASURING INSTRUMENTS
HIGH GRADE THERMOMETERS
SCIENTIFIC APPARATUS

323 ARCH STREET
PHILADELPHIA, PA., July 13, 1918.

Mr. Thomas A. Edison,
Attn. Mr. Wm. H. Meadowcroft,
Orange, N. J.

Dear Mr. Meadowcroft:-

Confirming our telephone conversation of this morning, we will start work immediately on two (2) 30 Mile Receiver Shunts, made in accordance with Western Electric Dwg. ES-180111, which will be a duplicate of the boxes which you have. The ones now in your possession, namely #4602 and 4727, were built by us for the New York Western in 1916 and are in accordance with the above ES number. We also will appreciate a letter of authority from the New York Western, advising us that it is perfectly satisfactory to them that we deliver these to you, for as I explained to you over the telephone, it is one of their developments and not being of our own engineering, they are, therefore, furnished only to the Western Electric Company and on orders authorized by them. We know, however, from the writer's talk with you it will be perfectly satisfactory for you to have them and should they be finished before we receive the authority from the New York Western, the writer will personally call them on the telephone for verbal authority, so that



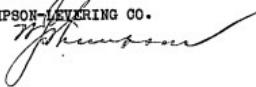
We are backing this boy
and the Government

Mr. Wm. H. Meadowcroft-----#2
they may be no time lost in getting these boxes to Mr. Edison.
You may rest assured we will co-operate with you in
every respect at all times.

Yours very truly,

WJT/VK

THOMPSON-LEVERING CO.



NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN B. THAYER,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

JUL 16 1918

To the Members of the Naval Consulting Board:

Please be advised that the next meeting of the
Naval Consulting Board will be held on JUL 27 1918
in the Carnegie Institution, Washington, D. C.

The preliminary meeting begins at nine o'clock
and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS,

Secretary,

Per *f.J.*

July 19, 1918.

Mr. W. S. Andrews,
Engineering Dept.,
General Electric Co.,
Schenectady, New York.

My dear Mr. Andrews:-

Some time ago you told me that the Company had a liquid air machine at your works there, and that they made a quantity of liquid air from time to time. In fact, you said that you could come down here some day and bring one or two gallons to show to Mr. Edison.

If conditions are still the same, I am sure that the Company would stand ready to supply some liquid air to the Government for some confidential experiments now being conducted. In that case it would be very helpful to our country, and I should be glad to put the proper Government officials in touch with the proper person at Schenectady.

Will you kindly advise me. With kindest regards,

I remain

Yours sincerely,

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON, President.
WILLIAM L. SAUNDERS, Vice-President.
BENJAMIN D. THAYER, Secretary.
THOMAS ROBBINS, Secretary.

OFFICE OF
W. R. WHITNEY
GENERAL ELECTRIC COMPANY
SCHENECTADY, N.Y.

July 19, 1918

Mr. Thomas A. Edison, President,
U.S. Naval Consulting Board,
Orange, N.J.

Dear Mr. Edison:

Isn't it a good idea for the Naval Consulting Board to get behind the fellows working at New London and, as well as possible, help develop your larger plan of a Navy experimental department there? So far as submarine detection work has gone, the New London group has done well. They have shown their willingness to do radical things. I understand that McDowell is unpopular in some bureaus because he goes so far. Isn't that a good sign?

Taking conditions as they actually are, not as we might wish them, I cannot see a practical way in years of getting general experimental work properly taken care of in our Navy thru the entirely untried, unstarted Washington plan. I guess that plan is really on the shelf. It must look to the Secretary, after hearing his many divergent advisers, as the the safest step was to wait. Troubled with all sorts of material-priority and labor-scarcity difficulties, I should hate to advise a start on a new, comprehensive program of building and equipment, but the thing could grow. This is really being illustrated at New London.

Mr. Edison - 2

It looks so simple to me that I want you to think the idea over. If you favor it, I think most of the Board would do so. I don't like our being stalled so long.

If you do not want to bother with this and will express your ideas to Dr. Hutchinson, I can talk with him about it.

These are some of the points in favor of the plan:

1. There is already established on the water-front at New London a fine growing nucleus for a laboratory, but devoted now to only a part of Navy needs.

2. It is already a child of the Navy, in which the Navy takes interest, but it is based on civilian work.

3. It has a Navy officer in command who is young, active, and ambitious, and who seems to appreciate experimental work. His work should be appreciated and greatly broadened. He can coöperate with outsiders.

4. It has several good experiments already on the staff, such as Mason, Bridgman, Pierce, and Merritt. Others, like Pupin, Whitehead, Langmuir, Chaffee, and Cady, are coöperating well.

5. It already has quite a large physical equipment, a good mechanic's shop well manned, good dock or wharf, offices, large foundry (practically on the ground), a small ship-way with apparatus for drawing out and launching submarine chasers, good nearly built quarters for the workmen, a concrete experimental tank under cover (20) 30), etc. Really about everything is there which we planned except as for size, and there's plenty of space to grow.

6. It is well located with respect to salt water. It is particularly well located for experiments with small boats and with submarines (the submarine base is only a short distance up the river). It is a good location for general labor, and as most of the labor become enlisted Navy men, a better place could scarcely be found. Plenty of Navy men would always be quickly available at this place. It could scarcely be excelled from the point of view of material supplies (your strong point). No part of America is so well fixed for formed brass, copper, and iron. No where else is it so easy to send a messenger to the factory for necessary work or material. Midway between Boston and New York, it also lies still nearer the advantages of Providence, Bridgeport, and the Naugatuck valley. Being behind Long Island it is as safe from attack as any practical shore station could be. There is plenty of adjacent land for growth and land which is not valuable for other purposes.

Mr. Edison - 4

I have not been in close touch with Mr. Brunton or Mr. Condict lately, and they may have much better plans than the above, but it is more important that we start helping something which can grow, than to wait for a perfect and mature plan. It is impossible to produce a complete Navy Laboratory at once, and exceedingly difficult to find men who combine the factors of Navy connections, interest in the work, youth, and energy, but I have also always held that the thing was very desirable (more so than most men realize), and that it could grow by a natural process, if decently encouraged. I think the start has been made, that it will continue to be well advanced under the present plan, and that we might be of great help by putting our shoulders to the already moving wheel.

I think we could carry all the desirable load of responsibility for failure of experiments, thus relieving the Navy men, and thus incorporating a factor whose value has been pointed out.

I can't help thinking that valuable time is passing and that we may be delaying a general Navy laboratory by not realizing and utilizing the conditions at New London.

Yours very truly,

WRW C

W.R. Wellesley

F. B. JEWETT
CHIEF ENGINEER
J. L. MCQUARRIE
ASSISTANT CHIEF ENGINEER
C. D. COLPITT
ASSISTANT CHIEF ENGINEER
E. H. COLPITT
ASSISTANT CHIEF ENGINEER
W. F. HENDRY
ASSISTANT CHIEF ENGINEER

Western Electric Company,

INCORPORATED

ENGINEERING DEPARTMENT
463 WEST STREET
NEW YORK

July 19, 1918.
IN REPLY REFER TO EHC-GI

REPLYING TO

MR. W. H. MEADOWCROFT,
c/o Thomas A. Edison, Inc.,
Lakeside Avenue,
West Orange,
New Jersey.

My dear Mr. Meadowcroft:

In accordance with your conversation with me this morning, I am sending by special messenger with this letter, two samples - one of bakelite carbon and the other of standard carbon. We do not know what use you desire to make of these samples, so cannot state whether they are likely to give very satisfactory results. I might point out in this connection that the relative performance of carbon differs with the microphone employed, the electric circuit, the choice of voltages, current densities, etc. Further, we find that various varieties of carbon differ greatly with respect to life under conditions of use. I should be glad to hear from you whether you find these samples useful or not.

Yours truly,

F. B. Jewett
EHC

Chief Engineer.

Herewith 1 sample std.
carbon; 1 sample bakelite carbon.

F. B. JEWETT
ASSISTANT CHIEF ENGINEER
J. L. MCQUARREY
ASSISTANT CHIEF ENGINEER
E. D. CRAFT
ASSISTANT CHIEF ENGINEER
E. H. COLPITTS
ASSISTANT CHIEF ENGINEER
W. F. HENDRY
ASSISTANT CHIEF ENGINEER

Western Electric Company,

INCORPORATED

ENGINEERING DEPARTMENT
463 WEST STREET
NEW YORK

July 19, 1918.

IN REPLY REFER TO

REPLYING TO

MR. W. H. MEADOWCROFT,
T.A. Edison Company, Inc.
Lakeside Ave., West Orange, N.J.

Dear Sir:-

In accordance with our conversation this morning, we sent you by special messenger, twelve 323 type transmitters without bells but equipped with mouthpieces. These were shipped on our shipping ticket X-586068. They are of the latest type which we are supplying for regular common battery service.

We understand that you will place an order covering these transmitters. If you will address this to me referring it to the attention of Mr. H.A. Frederick, it will simplify our handling of the matter.

Yours truly,

F. B. Jewett
E.E.C.
Chief Engineer.

Licent

United States of America
Department of the Interior.
Bureau of Mines.
Explosives License.

License No. 1008343.

Date issued

JULY 14 1918

This Analyst's license is hereby granted
to Thomas A. Edison
to purchase and use explosives for experimental purposes.

Address. Valley Road

City. West Orange,
County. Essex
State. New Jersey.

Under act of Congress, approved Oct 6, 1917.

Certified copy of
License

1008343

Public No. 58, 2nd
New A. Manning
Director of Bureau of Mines

By Rannie D. Effinger
Licensing officer

JULY 14 1918
Not transferable At - Orange, Essex, New Jersey
City. County. State

July 22, 1918.

Dr. W. R. Whitney,
c/o General Electric Co.,
Schonectady, N.Y.

My dear Whitney:

New London is a far better place
than either Washington or Annapolis. It has every-
thing in its favor, except not being near New York.

I have called Secretary Daniels attention
to a place within 40 minutes of Brooklyn Navy Yard,
to the Sound; 114 acres, very cheap, and very deep
water and he promised six weeks ago to go with me to
see it, but I think it has slipped his mind.

I also strongly advised him to extend the
New London Laboratory and do more research work there
and stop manufacturing there. He made notes and
these also have probably slipped his mind.

Today I have written him again reminding
him of it.

Yours sincerely,

A.

[ATTACHMENT/ENCLOSURE]

My Dear Mr. Lincoln

New London is a far better
place than either Washington
or Annapolis. It has everything
in its favor, except that being
near N.Y. - I have called
Ferry Daniels attention to a
place within 40 minutes of
Brooklyn Navy Yard,
on the Sound, 114 acres,
very cheap, & very deep water
& he promised to make up
to go with me to see it.

N
but I think it has slipped
his mind. It also strongly
advised to extend the
New London Lab & do more
research work there &
stop manufacturing there.
He made notes & they ^{we} have
probably slipped his mind.
Today I have written
him again reminding him
of it,

Edison

July 22, 1910.

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D.C.

My dear Mr. Daniels:

Don't forget you promised
that when you came to New York you would go and
see the proposed Laboratory property that is only
one hour from Brooklyn Navy Yard.

Yours sincerely,

[ATTACHMENT/ENCLOSURE]

July 22, 1918

Levy D

Don't forget when
you come to see me you
can come to my house
go where the people
habaneros properly
only I know from
Tirachil on New York

S

July 23, 1916.

Excelsior Motor Mfg. & Supply Co.,
37 Cortland Street,
Chicago, Ill.

Gentlemen: Attention: Mr. T. W. Henderson:

We have been expecting to receive the blue prints of the motor and transmission you have supplied us, but up to this time they have not arrived. We are in urgent need for them and I would ask that you kindly ^{post} them as soon as possible addressing same in my name.

Yours very truly,

Assistant to Mr. Edison.

July 24, 1918.

Miller Rubber Co.,

Akron, Ohio.

Gentlemen:

In my experiments for the Government I am using a considerable number of the large red rubber sponges, which I believe are made by your concern.

If possible, I would like to use the same material in a different shape. Will you kindly let me know by return mail in what shape you can make this material. I would like to have it so that I could cut out sheets about eight inches wide, about 5/8 of an inch thick and as long as possible.

Will you please give me your full information on the subject. The material is to be used for submarine detection, and is wanted for the Government.

Yours very truly,

A/5511.

[ATTACHMENT/ENCLOSURE]

Wrote to Miller Rubber Co

to day that we are
using a considerable amount
of the large size Rubber
Sponges,

We would like to know
in what shape you can
make this material.

We would like to cut out
Sheets about 8 inches
wide. About $5/8$ thick
and as long as possible.
Please give us full
information, it is to be

[ATTACHMENT/ENCLOSURE]

used for Submarines detection
and located by the
government

H. W. TITMAN, PRESIDENT

Main Office: PITTSSTON, PA.

H. C. HOOVER, SECRETARY

E. B. BRUMM, TREAS. & GEN. MGR.

Branch Office: MAHANOY CITY, PA.



BLACK DIAMOND POWDER CO.
MANUFACTURERS OF
HIGH GRADE EXPLOSIVES



Mills at HAUCKS and SUSCON, PA.

Ship all goods for Haucks, Pa. to Black Diamond Powder Co. Siding for P. & R. R. delivery

Ship all goods for Suscon, Pa. to Black Diamond Powder Co. Siding for N.Y.S. & W.R.R. delivery

An Independent Company in no way connected with a trust

BOTH PHONES

For prompt attention address reply to

Pittston, Pa., July 24/18.

Mr. Wm. H. Meadowcroft,
Orange, N.J.

Dear Sir:

We had the matter up with the railroad company, concerning shipped powder made with the ingredients mentioned by Mr. Edison, and they decided that apparently it would have somewhat the same hazard as black powder, and we do not think that there will be any difficulty in having them accept it for shipment.

If you think that there will be more of these goods wanted, it would be well to send them a one pound sample. Address to the Chemical Laboratory, Bureau of Explosives, South Amboy, N.J., as they wish to ascertain the rate of burning of the mixture.

They made inquiries concerning proportions of ingredients, etc., but we thought perhaps it would not meet with your approval to mention it so we did not give them the information.

Of course if there is not likely to be any use for the goods, it will not be necessary to send the one pound sample.

Thanking you for your attention to the matter, we remain

Respectfully,

BLACK DIAMOND POWDER CO.,

E. B. Brumm, MGR.

5520

July 25, 1918.

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D.C.

My dear Mr. Daniels:

In following up my experiments
in locating the position of guns by sound, I wish
to send an observer down to Sandy Hook, and have
written to the Bureau of Ordnance, War Department,
for permission.

In the conduct of these experiments, it
may be desirable to use several beacons on the New
Jersey shore as observation points. I believe
these come under your jurisdiction, and, therefore,
write to ask if you will issue a permit for my Assistant
and helpers to have access to the following beacons
on the New Jersey shore of Sandy Hook Bay, namely,
Chapel Hill Beacon, Conover Beacon, Waackanck Beacon
and Point Comfort Beacon.

Yours sincerely,

A/L514.

Ordnance
July 25, 1910.

Bureau of Ordnance,
War Department,
Washington, D.C.

1. I am engaged in making some experiments for the Secretary of the Navy, one of such experiments being in the line of locating the position of guns by sound.
2. I understand that there is considerable gun firing down at Sandy Hook, and as this is within a reasonable convenient distance from my Laboratory I would like to obtain permission to send one of my Assistants with apparatus and several helpers to Sandy Hook to make observations. My Assistant has already seen the Commanding Officer at Fort Hancock, and made explanations as to the apparatus and the desired location, all of which was apparently satisfactory.
3. It would be necessary to have a Surveyor run base lines on the Hook at a short distance away from the main land. If permissible, this might be done by someone from the New York office of the U. S. Coast and Geodetic Survey.
4. I, therefore, beg to ask that the Bureau will extend permission to me to send my Assistant and helpers (probably not more than three) to go to the Sandy Hook observation with my apparatus and make observations, also to make use of the tower at an observing point and have base lines laid out by a Surveyor.

Respectfully yours,

A/6513.

THE SECRETARY OF THE NAVY.

WASHINGTON.

July 26, 1918.

My dear Mr. Edison:

I have not forgotten my promise but the only time I have been in New York I left Washington at three o'clock in the afternoon and returned on the midnight train. The next time I come I will write you and I hope to be able to do so next month.

Always faithfully yours,

Josephine Daniels

Mr. Thomas A. Edison,
Orange, New Jersey.

July 26, 1918.

Mr. E. B. Brown, Manager,
Black Diamond Powder Co.,
Pittston, Pa.

Dear Sir:-

I have received your favor of the 24th instant, and have shown it to Mr. Edison. He thinks very well of your suggestion to send a pound sample of the special powder to the Chemical Laboratory, Bureau of Explosives, South Amboy, N.J.

I will attend to the sending of the sample as soon as I hear from you in reply to this letter. I do not feel quite sure whether the Chemical Laboratory you refer to is connected with one of the Railroad Companies, or whether it is a Government Laboratory. I will await your advice.

Mr. Edison is glad that you did not give the formula, as he thinks it is just as well that this should be kept quiet for the present.

Yours very truly,

Assistant to Mr. Edison.

A/5520.

H. W. JETMAN, PRESIDENT
Main Office: TISTON, PA.

H. C. HOOVER, SECRETARY

E. D. DRUMM, TREAS. & GEN. MGR.
Branch Office: MAHANOY CITY, PA.



BLACK DIAMOND POWDER CO.

MANUFACTURERS OF

HIGH GRADE EXPLOSIVES

Mills at HAUCKS and SUSCON, PA.

Ship all goods for Haucks, Pa. to Black Diamond Powder Co. Siding for P. & R. R. delivery

Ship all goods for Suscon, Pa. to Black Diamond Powder Co. Siding for N.Y.S. & W.R.R. delivery

An Independent Company in no way connected with a trust

BOTH PHONES

For prompt attention address reply to

Pittston, Pa., July 27/18.

Mr. Wm. H. Meadowcroft,
Orange, N.J.

Dear Sir:

Replying to yours of July 26th, would say, the Bureau for the safe transportation of explosives and other dangerous articles, is a bureau established by practically all the rail-road companies in the United States, and the Interstate Commerce Commission usually follows their suggestions in making regulation for transporting explosives.

We judge that the chemical Laboratory, Bureau of Explosives, at South Amboy, N.J. belongs to this same bureau, and we do not think that it is a government laboratory.

The regulations for express shipments states that samples of explosives for laboratory examination are not to exceed a net weight of half pound for each sample. This sample is to be placed in well secured metal cans or glass bottles, but more than one can or bottle can be placed in a wooden box.

We are enclosing the last letter from this Bureau of Explosives which will probably explain the whole matter.

Respectfully,

BLACK DIAMOND POWDER COMPANY,

E. D. Drummond, MGR.

5554

July 28, 1918.

Mr. H. S. Firestone,

Akron, Ohio.

My dear Mr. Firestone:

I am in great need of some thin vulcanizing tape considerably thinner than I can get anywhere around New York. I am enclosing herewith, a sample of the thinnest I can find.

Would you or can you make me a roll of vulcanizing tape that would be only 1/64 of an inch thick? The sample sent herewith is entirely too thick. I want it for submarine experimental work.

If you can make it, will you please do so at the earliest possible moment, and forward it by Parcel Post, Special Delivery, to my assistant, Mr. W. H. Headowcroft.

Please let me hear from you as soon as possible.

Yours very truly,

A/6549.

Enclosure.

[ATTACHMENT/ENCLOSURE]

Freslon,

I am in great need of some
thin vulcanizing Tape considerably
thinner than I can get away
where around N.York

I send you Thinnest sample
I can find. Would or can
you make me a roll of
which is only $\frac{1}{64}$ th of an
inch thick. The sample
sent herewith is entirely
too thick - We want it
for Dieblowing work.

Zee

July 29, 1916.

Wards Natural Science Establishment,

Rochester, N.Y.

Gentlemen:

Mr. Edison is desirous of obtaining a small quantity of stannum carbonate, native, free from flaws. He wished to turn out a few cylinders 3/4 inch by one inch in length for a special experiment he is making for the Government.

Can you supply some pieces, say, about half-pound altogether?

Yours very truly,

Assistant to Mr. Edison.

A/B/46.

THE MILLER RUBBER CO.



TIRE ACCESSORIES
DRUGGISTS' SUPPLIES
MOLDED GOODS.

CABLE ADDRESS:
MILLRUBBER
AT LITTLEFIELD,
WESTERN UNION
AND TELEGRAPH
ADDRESS ALL COMMUNICATIONS TO
THE COMPANY, NOT TO INDIVIDUALS.
IN REPLY PLEASE REFER TO WSD:LP

AKRON OHIO U.S.A.

July 29, 1918.

AKRON, OHIO.

Mr. Thomas A. Edison,
Orange,
N. J.

Dear Sir:-

ALL AGREEMENTS ARE CONTINGENT UPON STRIKES, FIRES OR ANY OTHER CAUSES BEYOND OUR CONTROL. ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

In response to your request of July 24th, we are today mailing you, under separate cover, by Parcel Post, special delivery, a sample sheet of what we know as our No.5 Sponge Rubber. This sheet is about 3/4 of an inch thick. We have also included a sample of our No.45 Red Sponge Rubber, which as you will note, is an entirely different product. We can manufacture different types in between these two.

For your information, we have conducted considerable experimental work for the Government in the development of this material, and have at the same time, acquired considerable information as to its adaptability for various purposes.

We would be very glad indeed to give you any information in our power as to this material if we had the necessary data to go on, as for the purpose for which it is to be used. Any of this material can be made in sheets 20 x 20, and of practically any thickness required up to 2-1/2 inches. Owing to its method of manufacture, there must always be an allowance of variance of 1/8" under or over in thickness. Size, of course, can be 20 x 20, or any modification of this size into which these sheets can be cut. Should it be necessary to have sheets longer than 20 inches, the material can be readily sliced and cemented and made into continuous lengths of any size desired.

If this material is of sufficient importance, and you so desire, we would be very glad to have one of your men come to the factory and go into the matter more fully, or the writer or one of our factory men, when

Miller
GARDED TO THE ROAD
Tires

THE MILLER RUBBER CO.

AKRON, OHIO.

Mr. Thomas A. Edison - Page 2.

in New York, would be glad to come out to your factory and go into matters with you.

Please believe that we are only too glad to assist you in any way to carry your experiments to a successful conclusion.

We will look forward to hearing from you further on the subject at your early convenience, and beg to remain

Very truly yours,

THE MILLER RUBBER COMPANY

(Signature)
Sales/Mgr. Drug Sundry Div.

Chen
July 30, 1918.

Chemical Laboratory,
Bureau of Explosives,
South Amboy, N.J.

Gentlemen:

Colonel E. W. Dunn of your Bureau has been in correspondence with the Black Diamond Powder Company, of Pittston, Pa., during the present month, in regard to some special powder made by that Company for Mr. Edison. They have sent by Mr. Edison, Colonel Dunn's letter of July 23d, stating that the risk, will, of course, depend on the rate of burning, and suggesting that a one pound sample be sent to you for examination.

We are, therefore, sending to you today by Express, two half-pound boxes of the mixture referred to, for your examination.

Yours very truly,

Assistant to Mr. Edison.

A/5553.

Postage

208.



GEORGE W. E. ATKINS, VICE-PRESIDENT

NEWCOMB CARLTON, PRESIDENT

BELVIDERE BROOKS, VICE-PRESIDENT

RECEIVER'S N.

TIME FILED

CHECK

SEND the following Telegram, subject to the terms
on back hereof, which we hereby agree to

July 30, 1918.

John Thomas,
Supt., Firestone Tire & Rubber Co.,
Akron, Ohio.

Mr. Edison wrote yesterday enclosing
sample of ordinary tire vulcanizing repair stock. He wants
this stock calendered one sixtyfourth or less of an inch thick.
Only requires four or five pounds from two to twelve inches
wide. Please have it made at once and send Parcel Post as
per his letter. You can no doubt make this on Laboratory
calender. Sample in Mr. Edison's letter is satisfactory
except for thickness. Must be about one sixtyfourth.

Firestone

77 words

CABLE ADDRESS:
"COSMOS"

FOUNDED 1882
INCORPORATED 1890

WARD'S NATURAL SCIENCE ESTABLISHMENT

84-102 COLLEGE AVENUE

FRANK A. WARD, Pres.
F. H. WARD Secy. & Treas.

ROCHESTER, N. Y., U. S. A.
July 30th, 1918.

Mr. Thomas A. Edison,

Orange, N. J.

Attention - Mr. Wm. H. Meadowcroft
A/5546

Dear Sir:-

In response to your favor of the 29th inst., we have run through our stock of Strontianite from Westphalia and California, and have selected four pieces which are as nearly free from flaws as anything we have. We are sending these to-day by Insured Parcel Post and enclose memorandum invoice. We hope that this material will prove satisfactory.

Assuring you of our desire to be of any service we can to you at any time, we remain

Very truly yours,

Ward's Natural Science Establishment.

per *Geo. L. English*

GLE:L

405 Fifth Avenue,
New York City, July 30, 1918. *R*

William H. Meadowcroft, Esq.,
c/o Thomas A. Wilson, Esq.,
Orange, New Jersey.

Dear Mr. Meadowcroft:

In response to your favor of the 26th instant, I am
pleased to inform you that Messrs. Minor & Amend of 3rd Avenue
& 18th Street, New York City, will hold for you for a few days
about five pounds of strontianite. Will you kindly communicate
with them direct?

The material you sent on the 24th is vanadinite -
vanadate of lead. The hexagonal are unusually pretty little
crystals.

Very truly yours,

*George F. Kunz
A.S.F.*

5563

ALL QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE

FACTORY & GENERAL OFFICES
AKRON, OHIO



CABLE ADDRESS
"FIRESTONE"

Akron, Ohio, July 31, 1918

Mr. Thomas A. Edison,
The Edison Laboratories,
Orange, N.J.

Dear Sir:-

Mr. H. S. Firestone wired us yesterday to ship you 5 lbs. repair stock two to ten inches wide and one-sixty-fourth in thickness. He stated that you had sent us a sample. Upon receipt of his telegram your sample had not yet been received so we forwarded you by Parcel Post last night 5 lbs. 1086 raymer gum calendered 1/64" thick, 10" wide.

We received your sample this morning and are having same analyzed at the present moment. If we find that the sample which we sent you is vastly different from the sample you sent us we will duplicate your sample and send you an additional 5 lbs.

Trusting that you will receive the 5 lbs. sample which we sent you last night in proper order and due time and awaiting your further commands, we remain,

Yours very truly,
THE FIRESTONE TIRE & RUBBER CO.

J. W. Thomas
General Superintendent

JWT/357

[ATTACHMENT/ENCLOSURE]

J. W. Gloman
19 S 58 A -
Akron, O.

Repair stock received yesterday
~~letter~~. Your letter today.
Certainly fine quick work
and just what I wanted.
Your ~~cooperation~~ Mr. Firestone's
cooperation much appreciated.

Thos A. Edison

July 31, 1916.

Dr. George F. Kunz,
401 Fifth Avenue,
New York; N.Y.

Dear Dr. Kunz:

Mr. Edison wished me to thank you very much for your favor of the 30th instant, and for the information you have given him. At his request, I am writing to Messrs. Elmer E. Amond about the strontianite.

Yours very truly,

Assistant to Mr. Edison.

A/L165.

July 31, 1919.

Bimer & Amend,
3d Ave. and 18th Street,
New York, N.Y.

Gentlemen:

Dr. George F. Kunz of Tiffany & Co., writes me that he has been in communication with you in regard to some stontianite, and states that you will hold for a few days about five pounds of this.

Mr. Edison wishes me to ask whether this stontianite is massive. He desires to cut a small cylinder about an inch in length for a special purpose, and requests me to ask that you will kindly send to him a small piece about an inch square or a trifle larger.

Yours very truly,

Assistant to Mr. Edison.

A/6564.

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
August 1918**

DIVISION OF OPERATIONS
UNITED STATES SHIPPING BOARD EMERGENCY FLEET CORPORATION
NEW YORK CITY.

August 1st, 1918.

Mr. W. H. Meadowcroft,
Edison Company,
Orange, N. J.

SUBJECT: Sea Anchor.

Dear Mr. Meadowcroft:

We have just received approval from Washington to use the Steamer CLIO for test of Mr. Edison's sea anchor.

This steamer sailed from Norfolk, Va., at one p.m. yesterday for Boston with a cargo of coal. Orders have been given for ship to report to us at New York on the next voyage for your test. We will get in touch with the steamer and give you reasonable notice, so that there will be no delay.

Respectfully yours,

Fran. M. Seth
Assistant Managing Agent.

FH/V

*5646
Selwyn*

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN B. THAYER,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Aug. 1, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

With regard to the visit of the Board to Detroit on Friday and Saturday, August 9 and 10, I have received the following two telegrams from Mr. Coffin:

"Arrangement made for rendezvous Detroit Athletic Club as place for Board meeting and accommodations for all attending to stay over night Friday and Saturday."

"Will visit Packard, Ford, Lincoln, Fisher and General Motors plants, also Eagle Shipbuilding Plant, making two full days. Meeting may be held evening of first day. Automobiles will be provided until Friday evening."

It is believed that most of the members from New York will take the Wolverine, leaving Grand Central Terminal, New York, at 5 o'clock on Thursday afternoon, Aug. 8, and arriving in Detroit at 7.10 on Friday morning, Aug. 9.

I shall communicate any further particulars which I receive.

Very truly yours,

Thomas Robins

per G.C.T.

GT

No.

6. To
American
Marine Cloth Co.

Marion, Pa.

13

United States Navy Yard,
NEW YORK, N.Y.

August 2, 1918.

My dear Mr. Edison:

We are trying to find some preparation which may be applied to canvas so that a large bag may be made to carry fuel oil. The bag will have to hold from two to three thousand gallons for four or five days at a time and a slight leakage is unimportant. If you know of any composition that would accomplish this purpose, I would be very grateful if you would give me some information about it. The bags would be kept filled for four or five days, then emptied and rolled up for ten days or two weeks, then refilled and so on. Rubber solutions would be attacked by the oil and shellac would lack the flexibility required.

I am well and happy in being rushed with work and hope you are the same.

With regards and best wishes,

Very sincerely yours,

GE Bush

Mr. Thomas A. Edison,
c/o Edison Laboratory,
Orange, N. J.

~~say~~ *Say*
If bag is to hold fuel oil then I think
that the cloth could be coated with
Viscose which is not affected by oil
or oil - Will try & find ~~out~~ address
of mfrs of Viscose Have ~~an~~ bag

Made up of Tarpaulin cloth, linseed oil -
cloth, I mean ~~some~~ Coats are made
hanging up & fill with oil -
The film of linseed oil is not soluble
in oil & some films are not
even softened or swelled by oil

S

August 3, 1918.

My dear Admiral:

I have received your favor of the 2d instant, am in reply as to what preparation may be used so that a large canvas bag will be able to carry fuel oil, let me say if the bag is to hold fuel oil then I think that the cloth could be coated with Viscose which is not affected by water or oil.

I would suggest that a small test bag be made up of tarpaulin cloth, linseed oil cloth, I mean the same as coats are made. Then hang the bag up and fill with oil. The film of linseed oil is not soluble in oil and some films are not even softened or swelled by oil.

Viscose, I understand, is made by the American Viscose Company, Marcus Hook, Pa.

I am also well and happy and very busy on my experiments for the Government.

Sincerely yours,

Rear-Admiral G.E. Burd,
United States Navy Yard,
New York, N.Y.

A.

August 3, 1918.

Bard's Natural Science Establishment,
84 College Avenue,
Rochester, N.Y.

Gentlemen: Attn: Mr. Geo. L. English:

Your letter of the 30th ultimo has been received,
regarding the small piece of strontianite which Mr. Edison
was desirous of securing.

The four pieces sent by you have only just come
to hand this morning and are entirely satisfactory to Mr.
Edison.

Enclosed you will find our Check No. U 7060 amounting
to \$1.25, in payment for same, per your bill, and I wish
to thank you in Mr. Edison's behalf for your prompt attention.

Yours very truly,

Assistant to Mr. Edison.

August 3, 1918.

The Miller Rubber Co.,

Akron, Ohio.

Gentlemen: Attn: Mr. W. S. Davison:

Allow me to acknowledge the receipt of your favor of the 29th ultimo, and to say that in the interim I have got in touch with your New York office and have found they had just what I wanted, and, accordingly, have taken care of my requirements for the present.

The Parcel Post package has not yet come to hand. If the samples which you have so kindly sent are in anyway an improvement, I will immediately get in touch with your New York office for further supplies.

Let me thank you for your prompt attention.

Yours very truly,

| CLASSES OF DOMESTIC SERVICE | |
|--------------------------------|--|
| Telegram | |
| Night Message | |
| Day Letter | |
| Night Letter | |
| Charges (if any) \$ | |

WESTERN UNION
TELEGRAMS  **CABLEGRAMS**

BY TELEPHONE FROM THE WESTERN UNION MAIN OFFICE
 NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASSES OF CABLE SERVICE | |
|-----------------------------|--|
| Full Rate | |
| Half Rate Deferred | |
| Cable Letter | |
| Week End Letter | |
| Charges (if any) \$ | |

Dated

To 11 NY R 46 NIIHLZEX

KEY WEST FLO AUG 5 1918

THOS A EDISON

WESTORANGE NJ

ADMIRAL FLETCHER COMMANDANT 1 TH NAVAL DISTRICT REFUSES TO GRANT
 LEAVE TO P D PAYNE LEAVE NECESSARY FOR DELIVERY OF
 MACHINE PLEASE WIRE HIM TODAY TO GRANT LEAVE REQUESTED BY
 PAYNE MACHINE NOW READY FOR SHIPMENT BY EXPRESS AS SOON AS
 LEAVE IS GRANTED

GERBOODE AND PAYNE

KEY WEST FLO

820AM AUG 6



J.W.T.
 Telec. Service
 Key West FLO

Cable Address "Edisons New York"

From the Laboratory
Thomas A. Edison,

Orange, N.J. August 6, 1918.

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D.C.

My dear Mr. Daniels:

I wrote you on July 25th stating
that I had written to the Bureau of Ordnance, War Depart-
ment, for permission to send down an observer to Sandy
Hook in connection with my experiments in locating the
position of guns by sound.

The Chief of Ordnance has taken pleasure in
extending to me and my assistants, the facilities of
the Sandy Hook Proving Grounds and I have sent my Assistant
down to make preliminary arrangements. He tells me that
there will be some slight expense to be taken care of
and that Major Kirk, Commanding Officer, asks that a
small appropriation of about \$500 be made available for
this work through the Navy Department, this appropriation
to be used on authorization of myself or assistant.

Will you kindly arrange for this so that there
will be no delay due to possible lack of authority on
Major Kirk's part?

Yours sincerely,

Mr. Edison said he would
pay up to \$500. - Is bill
him.

8/6/18

9:58 A.M.

W.H. Tel.

~~Communication~~

Admiral Trant
Commandant, Navy Yard

Key West,

P D Payne who been making
gyroscopic Lamps (Telephones)
He wants leave to deliver
lamps & send by Express
Fletcher reference
Can't understand can
you fix it so Lamp
can be sent, Edison

T
U. S. Naval Station,
Key West, Fla.

IN REPLY REFER TO
No. 565-1918.

FAT/CAW.

August 6, 1918.

My dear Mr. Edison:

I have your telegram regarding Payne and the gyroscopic lamp and have telegraphed you today that the box is being shipped but that Payne cannot be granted leave. It appears that he, as well as his partner, Gorbode, are under charges which are being investigated by the Navy Department, and until these are acted upon Admiral Fletcher cannot grant them leave.

I appreciate the fact that the completion of this apparatus has been greatly delayed. I have made frequent inquiries, from time to time, regarding progress on the work and was several times informed by either Payne or Gorbode, or by Gunner Morgan, whom I detailed to keep an eye on the work, that the activity and frequent short cruises of the vessel to which the two men are attached interfered largely with their work.

On Saturday however, in company with Lieutenant Quinlan, I witnessed a demonstration of the lamp. Lieutenant Quinlan then told me that Payne was to be granted leave, and that he would go to Orange and demonstrate the apparatus to you. Payne appeared very anxious to make this trip and wanted to ship the box addressed to himself at Orange, but I said, no, that the Supply Officer would attend to shipping it and that it should be addressed to you.

Today I received your telegram and, upon making investigations, learned the reason for Payne not being granted leave. I also found that when he heard he could not have leave Payne went to the express office, having first obtained a copy of the Bill of Lading, and got the box, which had been sent there yesterday, and took it some place out in town. When questioned about this procedure he gave no very definite reply other than that he stated he felt he had an interest in the apparatus and did not want to ship it and have any one else open the box. He also spoke of "compensation" and vaguely referred to some agreement that he had made with you. I told him that he need have no cause for alarm, but that he and his companion would receive full credit for their work and for such ideas as may have been put into the apparatus by them.

I am sorry that Payne cannot go to Orange at the present time, as it would undoubtedly be more satisfactory to you to have him demonstrate and operate the apparatus. I told him, however, to write out and send you such description or such instructions regarding the apparatus as he might think necessary.

Mra Edison - 2.

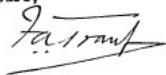
No. 565-1918.

-2-

FAT/CAW.

I enclose herewith Bill of Lading covering the ship
ment. With kind regards,

Respectfully yours,



Mr. Thomas A. Edison,
Orange, N. J.

[ATTACHMENT/ENCLOSURE]

Govt. Trans. Stock Form 5.
Form approved by Comptroller of the
Treasury, May, 1914.



GOVERNMENT BILL OF LADING.

ORIGINAL.

U. S. NAVY DEPARTMENT,
BUREAU OF SUPPLIES AND ACCOUNTS.

N. No. 155.....

(Office authorizing shipment.)

NAVAL STATION, KEY WEST, FLA. AUG. 5, 1918. (Date)

(Name from which shipment is actually forwarded.)

by the AMERICAN RAILWAY EXPRESS CO. (Name of transportation company)
the public property hereinafter described, in apparent good order and condition (contents and value unknown),
to be forwarded subject to conditions stated on the reverse hereof, from KEY WEST, FLA.
to WEST ORANGE, N. J., by said company and connecting lines, there to be delivered in like
good order and condition to THOS. A. EDISON, c/o EDISON LABORATORIES, WEST ORANGE, N. J
(contents.)
via (Route journey only when some substantial interest of the Government is involved therewith.)

| MARKS. | NUMBERS. | NUMBER AND DESCRIPTION OF PACKAGES. | CONTENTS. | WEIGHTS. |
|---|----------|-------------------------------------|--|--------------------|
| TO: THOS. A. EDISON, c/o EDISON LABORATORIES, WEST ORANGE, N. J. | | 1 box | Delicate Instruments To Value \$3000.00 | 174 ^{1/2} |

SEE INSTRUCTIONS ON REVERSE HEREOF.

TARIFF AUTHORITY.
(To be filled in by General Office rendering account.)

AMERICAN RAILWAY EXPRESS CO.

(Name of transportation company.)

AUTHORITY FOR SHIPMENT.

Per G. P. Connelly, Agent, Agent.

CONSIGNEE'S CERTIFICATE OF DELIVERY.

(Place) (Date)

I have this day received from _____ the public
property described in this bill of lading, in apparent good order and condition, except as noted on the reverse hereof.
Weight _____ lbs. (In words) (In figures)

INSTRUCTIONS FOR BILLING.

- Consignee should pay no charges on this shipment.
- Charges to be billed against Bureau of Supplies and Accounts, Navy Department, on authorized Government voucher form, attaching this bill of lading as a supporting paper.

Form 1217

| | |
|--------------------------|--------------------------|
| CLASS OF SERVICE DESIRED | |
| Fast Day Message | <input type="checkbox"/> |
| Day Letter | <input type="checkbox"/> |
| Night Message | <input type="checkbox"/> |
| Night Letter | <input type="checkbox"/> |

Priority: Check or X indicate the class of service desired;
OTHERWISE THIS MESSAGE WILL BE TRANSMITTED AS A
FAST DAY MESSAGE.

WESTERN UNION
TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| |
|----------------|
| Reciever's No. |
| Check |
| Time Filled |

Send the following telegram, subject to the terms
on back hereof, which are hereby agreed to

2
3
NIGHT LETTER KEY WEST FLA AUG 6 1918

THOMAS A EDISON
ORANGE N J

MACHINE SHIPPED TODAY IT WOULD BE TO OUR MUTUAL ADVANTAGE FOR PAYNE
TO DEMONSTRATE MACHINE OUR COMMANDING OFFICER APPROVES FURLough ADMIRAL FLETCHER
DISAPPROVES ON ACCOUNT OF HONOLULU TROUBLE NO CHARGES AGAINST US. WILL YOU
ARRANGE FURLough THROUGH NAVY DEPARTMENT PLEASE WIRE ANSWER TO US

GERBOE PAYNE



Show to Mr. E. M. and

August 7, 1918.

Thermoid Rubber Co.,

Trenton, N.J.

Gentlemen:

We wish to inquire further regarding your universal joints.

For our purpose we will need a joint that can transmit 15 H.P. at 5000 RPM. Could you supply us with such a universal, maximum diameter to be 4 inches. The shaft deflexion will be very slight - not to exceed 5 degrees.

Our initial order would be for two joints.

Yours very truly,

S. G. Warner,

Research Engineer.

Aug. 7th, 18.

From: P.D.Payne and A.G.Gerbode.
To : Thomas A. Edison.
Subject: Gyro running light stabilizer.

1. The experimental machine which we have built for you was shipped yesterday by express by the commandant of the Naval Station. In our plans we had intended for one man to accompany this machine in order to demonstrate to you and to explain it but as he was not allowed to go we hereby explain to you improvements necessary as we have found them.

2. First a motor of better construction is necessary, this motor must have a shaft of ample size to carry the Gyro wheels without danger of them becoming out of alignment, the wheels should be fitted to the shaft in the same manner as your battery terminals are secured, that is on a taper, this will insure perfect alignment of wheels upon their removal and replacement. The wheels on being fitted to run perfectly true should be balanced both statically and dynamically to overcome the vibration which would result from lack of uniformity in the composition of the metal. The mercury clinometer which we have provided for cuttingout the light when instrument leaves the horizontal will not function properly if the machine has excessive vibration.

3. This clinometer consists simply of a hemispherical cup filled with mercury. There is a electrical connection in permanent contact with the mercury and another electrical connection placed in such a manner that the mercury will touch it when the container is tilted more than twenty minutes, this closes circuit for a relay which upon being energized opens the light circuit. This clinometer may be mounted on any part of the machine carried by the inner gimbal ring.

4. The leading wires for the motor, light and clinometer should be installed in a way to cause less friction, this may be easily accomplished by using rubbing contacts at all gimbal intersections.

5. The Gyro elements should be slightly more pendulous but the upper wheel must be kept above the axis of its gimbal.

6. We have found that a reflected ^{light} is preferable to a light from which you can see the lamp filament from the slots. The carbon lamps which we installed should be replaced by mazda. In our tests we found that the light now installed will give sufficient visibility for we understand that visibility of five hundred yards is all that would ever be required, while the carbon lamp will produce that, this produces too much heat which will cause the wooden disks to warp. We find that the rays of light emitted from the slots are plainly visible upon nearby objects which would happen to be in their path, masts and stacks for instance, this will necessitate the blocking off of small parts of the diameter of the disks.

7. The whole machine must be protected from the wind as a breeze would tend to energize the Gyroscope and throw it off its plane. This protection can be made of metal or wood with windows for the light.

8. In our tests we mounted the instrument in a row boat alongside the submarine and obtained our current from the submarine and rolled and pitched the boat vigorously all the while the instrument remaining level within a few minutes. We also made a shop test by mounting the machine on an iron kettle which allowed us to better observe its action. With this shop rolling device we made a demonstration to the Commandant of the Naval Station and our Commanding Officer. The instrument was satisfactory to them. We are inclosing a picture showing this shop test.

Respectfully submitted,

L.S. Payne
A.G. Perforce

August the 7th, 1918.

Mr. Thos. A. Edison;
Edison Laboratories,
West Orange, New Jersey.

Dear Sir:

The delay is due to the fact that the importance of the experiment was not shown due appreciation in this yard. The machine shop, for instance, has not turned out satisfactory work in that the work often had to be done over and over to use them at all. The Gyro wheels alone have been back numerous times and still are not round and are far from satisfactory. Our work was often laid aside for work of less importance. This work which was given the machine shop would have been done by us in much shorter time except for lack of facilities at night, which was the only time we had to put on the job. Further delay part of which you know about, was caused by opposition on the part of the former Division Commander, and Division Torpedo Officer also false reports concerning lathe by Torpedo Gunner. Our Commanding Officer is the only one who has shown an interest or assisted us in any way. His enthusiasm has only been shown in the last month. In the later stages of the machine he has allowed one of us to put in several days work on this in working hours.

Commandant Traut has neither opposed or assisted us and has visited us only twice in the experiment, the last time his visit was for the purpose of reprimanding us for delay for which we were not to blame. Since we have completed this machine Mr. Traut asked us for an explanation of our delay and said that we should have reported these delays to him. Every enlisted man knows that it is proper to consult the junior officer in all cases and he is never received with much civility by the higher officers for this reason. Therefore, as Mr. Traut did not watch the work at our shop, we hesitated in calling on him.

There is still a sum due us for this work on the original agreement made by you at the beginning of the work and we hope you will appreciate the amount of night work we have put in this in addition to our day duty on the submarine. There is also a sum of (\$36) thirty six dollars for twelve ball bearings (\$5) five dollars for mercury and (\$9) nine dollars for sundries making a total of (\$50.00) fifty dollars.

At the time of taking this job we were carrying on important experiments of our own which we laid aside in order to devote our whole spare time on your devices.

We rely upon your generosity and appreciation of this work to help us make a start with our experiments as we learned from Mr. Hanford that you had a desire to help us, therefore any addition that you might make to this original sum help us immeasurably and would probably appear very small to you.

Awaiting an early reply from you we remain

Respectfully yours

L.H. Sayre,
U.S. Rubber Co.,
U.S.A.

Address:

P.O. Box 283

Keweenaw, Fla.

August 9, 1918.

Messrs. Payne and Gorbode,
U. S. Naval Station,
Key West, Fla.

Gentlemen:

I did not answer your telegram as I
heard they would not give you leave until the
Honolulu affair investigation was finished. However,
I hope the apparatus will work when we test it
on the Sachem and that you will get the money.

Yours very truly;

[ATTACHMENT/ENCLOSURE]

Pacific Islands

Mechanics

U.S. Navy Yard

Key West

I did not answer your
telegraph as I heard they
would not give you
leads until Honolulu
affair investigation was
finished. However

I hope it will work
when we test it on
Sachem & that
you will get the
money - Edison

August 12, 1918.

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D.C.

My dear Mr. Daniels:

Mr. Hanford comes to see you
on my behalf, about something which may prove important
in preventing collision in convoys, etc.

Yours sincerely,

[ATTACHMENT/ENCLOSURE]

Sayy Darwesh

Mr. Harford comes to
see you about something
which may prove
important in
resolving Collision
in Conways etc -

Eldessa

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
President.
WILLIAM L. SAUNDERS,
Vice President.
BENJAMIN S. THAYER,
First Chairman.
THOMAS ROBINSON,
Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Aug. 12, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

It has been suggested that the Board hold its next meeting at the Hotel Belvidere, Baltimore, Md., on the evening of Friday, August 23rd, and spend the next day at the Ordnance Proving Ground at Aberdeen, Md., in order to witness the tests of artillery and ammunition. This plan has not yet been decided upon, it being simply the purpose of this notice to ascertain the views of our members on the subject, and I ask you to sign and return the enclosed blank without delay.

Yours very truly,

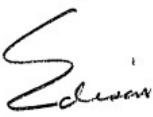
Thomas Robinson
Secy. J.

TR/gt
Enc.

D. G.

[ATTACHMENT/ENCLOSURE]

I ^{am}
am not in favor of holding the next meeting
in Baltimore on Friday, August 23rd, and spending
the next day at Aberdeen, Md.

Think all should go. I have
been there -

Edmonson

N. D. MAHER, PRESIDENT.

W. J. FRIPP, VICE-PRESIDENT.

J. E. FAIRBANKS, SECRETARY AND TREASURER

BUREAU OF EXPLOSIVES



COLONEL H. W. BURN, CHIEF INSPECTOR.
20 VEERY STREET, NEW YORK, N. Y.

CHARLES P. BEISTLE, CHEMIST.

REPORT FROM CHEMICAL
LABORATORY

26-16-189

17-1335

SOUTH AMBOY, N. J., Aug. 13, 191.....191

Slow Burning Powder.

A sample of slow burning powder made by the Black Diamond Powder Company was sent to this laboratory by the Thomas A. Edison Laboratory.

This powder had much the same appearance as ordinary black blasting powder and was granulated on outside. The granulation was coarse the grains being approximately $1\frac{1}{8} \times 3\frac{1}{16}$ inch in diameter. The powder was analysed with the following results.

| | |
|-------------------|--------|
| Moisture | 3.58% |
| Sodium Carbonate | 9.54% |
| Potassium Nitrate | 72.54% |
| Charcoal | 14.34% |

This powder when ignited burns rapidly and with deflagration, the combustion is slightly slower than that of black blasting powder of similar granulation. It can be ignited by the ordinary safety fuse.

Owing to the similarity in composition of material with black powder, and as the hazards of handling are of the same nature but of somewhat less degree it is recommended that this material be shipped under the same conditions as black powder, and under the name of black powder as a low explosive.

Charles P. Beistle,
Chief Chemist.

C O P Y.
JG.

428-10-G.

U.S.S. K-3
14 August, 1938.

From: Commanding Officer,
To: Paul D. Payne, OR(G), US.Navy.
Subject: Travel Orders.

1. In accordance with the following radiogram, you will proceed this date to New York City, and report to Two eighty Broadway, N.Y. and will further report to Mr. Thomas A. Edison at Orange, N.J. Upon completion of your temporary duty you will return to your present station; Naval Station, Key West, Florida.

"Suspend that part of the Bureau's letter of August 8th directing making of recommendation for trial by General Court Martial of Paul Donald Payne Chief Electrician General attached to U.S.S. K-3 period Expedite his transfer to Two eighty Broadway New York, N.Y. to report to Mr. Thomas A. Edison at Orange, N.J. Upon completion of temporary duty he is to be returned to present station.

Report action. 16013 "Bunav.

2. Your necessary transportation and subsistence are furnished you herewith to New York and return.

/s/ E. H. Quinlan.

3-D-520. Lat Endorsement. WASHDC-DO. 17 August 1938. -

From: Commandant, Third Naval District.
To: Paul D. Payne, OR(G), U.S.Navy.

1. Reported. .
2. Proceed as directed.

Naval Station
Key West, Florida.
OR
SP(R)2
SP(F)
Jkt
Th.A.Edison
Orange N.J.

FOR TANDEM
ENCLOSURE

Payne got here 11:15 a.m. 7/18
Haa

[ATTACHMENT/ENCLOSURE]

Payne

When Payne arrives from Ray
West, he can use my carriage for
Experimenting with the Lamp, at
night nobody will notice it. I don't
want any Experts with Lamp made
at lab. Any work he wants
made ~~to~~ arrange with John
Constable -

When he is ready, arrange
with Capt Harris so he can
go on Sachem & make what
tests are necessary to perfect
it & see if it is a practicable
device

Edison

August 18, 1918.

Hon. Newton D. Baker,
The Secretary of War,
Washington, D.C.

Dear Mr. Baker:

As mustard and other gases settle down in trenches, woods and low places, I suggest firing Oleum shells into these areas to act on gas, which it certainly will do, sulphonate them and render them harmless.

I now have perfected a 3" gun shell using regular 3" projectiles, carrying Oleum 60%, which, on explosion, gives a dense fog covering an area of 75 feet.

Yours sincerely,

[ATTACHMENT/ENCLOSURE]

Mr. Baker

Requ'd

as Mustard & other gases will be soon
in trenches Woods loco places.
~~suppose~~ suggest firing
Obum shells into these areas
to act on gas which it certain
will do sulphuric acid &
encender them harmless

I ~~now~~ have ~~#~~ 3" gun shell
~~(#)~~ irregular 3"

projectiles, carrying Obum 60%
which explosion gives a
dense fog covering an area
of 75 feet, Thos Addison

Proving H.

August 18, 1918.

Commanding Officer,
Proving Grounds,
Sandy Hook, N.J.

My dear Sir:-

This will introduce Mr. Henry G. Wolfe,
one of my Laboratory experimenters. He wants to have
you fire two or more smoke bombs from a three-inch gun.
I hope you will be able to do so.

Yours very truly,

[ATTACHMENT/ENCLOSURE]

Major Kirk,

This will introduce
Mr - Wolfe one of my
Lieutenants ~~xxxxx~~
Especially, He would
like to have you fire two
or more smoke bombs
from a 3 inch gun
~~xxxxx~~ I hope you
will be able to
do so -
T C G

LIGHTING DEPARTMENT

CITY OF SEATTLE

J. D. ROSS, FELL. AM. INST. ELEC. ENG'S.

SUPERINTENDENT

MEMBER BOARD OF PUBLIC WORKS

August 15, 1918.

Mr. Thomas A. Edison,
Orange,
New Jersey.

Dear Mr. Edison:

I am sending you a copy of a letter which
is the result of some work that I have done on the detection
of the submarine.

You and Mr. Hutchinson were very kind to me
when I visited you about eight years ago, and I would very

much appreciate your comments on my work. I have 55,000

customers here to take care of and have had to furnish cur-

rent for the turning out of about 400,000 tons of shipping,

so that I have not put a great deal of time on these inves-
tigations, but I am ready to give any part of my time, or

possibly all of it, or co-operate in any way.

It seems to me that a detector along these

lines should be possible, where the mass of steel to be de-

tected is over two hundred feet long, at a distance of 2000

feet, or even less. The use of small wooden boats with a

proper detector would make a patrol very effective and in-

expensive and also keep the subs from getting away from their

base.

Yours very truly,

You'll remember I'm the one who wanted
you to patent the sprinkling system everyone
will eventually use

JDR-s

Supt. of Lighting.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
WILLIAM L. SAUNDERS,
BENJAMIN S. THAYER,
THOMAS ROBINS

SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

August 15, 1918.

To the members of the Naval Consulting Board:

The Chairman has decided that, as the Board has not held a meeting in Washington for some time and as there will be more to see at Aberdeen later on in the season, the next meeting of the Board will be held at the Carnegie Institution, Washington, on August 24 at 10 A. M., as usual.

Very truly yours,

THOMAS ROBINS,

Secretary,

Per *gms.*

August 17, 1918.

Hon. Newton D. Baker,
Secretary of War,
Washington, D. C.

Dear Mr. Secretary:

Allow me to hand you herewith our
Laboratory bill for experimental done by Mr. Edison
covering a period, June 17th, 1918, to July 31st,
1918, at cost, amounting to \$3,685.60.

This bill is sent in duplicate, certified
to by Mr. Edison.

When the check is ready, you can forward
it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

August 17, 1918.

Mr. Thomas Robins, Secretary,
Naval Consulting Board,
New York, N.Y.

My dear Mr. Robins:

Your letter of the 12th instant
has been shown to Mr. Edison, regarding the next meeting
of the Board at Baltimore, Md., spending the next day
at the Proving Grounds, Aberdeen, Md.

Mr. Edison says he thinks all the Members
should go, and that he has been there several times.

Your notice for the next meeting of the Board
at Washington has come in this morning's mail, so we
understand just where the next meeting will be - dis-
regarding the Baltimore notice.

Yours very truly,

Assistant to Mr. Edison.

August 17, 1918.

Rear-Admiral W. Strother Smith, U. S. N.,
Navy Department,
Washington, D. C.

My dear Admiral:

Allow me to hand you herewith
our Laboratory bill for experimental work done
by Mr. Edison covering a period, June 17th, 1918,
to July 31st, 1918, at cost, amounting to \$10,296.96.

This bill is sent in duplicate, certified
to by Mr. Edison.

When the check is ready, you can forward
it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

W.H.I.Jr./plt

TELEGRAPH ADDRESS

SANDY HOOK, N.J.
EXPRESS ADDRESSES
HIGHLANDS, N.J.
FREIGHT ADDRESS
HIGHLAND BEACH, N.J.
RAILROAD STATION
HIGHLANDS, N.J.
ON GENERAL RAILROAD
OF NEW JERSEY

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO "THE COMMANDING OFFICER."

Not Handwritten
SANDY HOOK PROVING GROUND

P. O., FORT HANCOCK, N.J.

IN REPLY ADDRESS:

"PLANNING DIVISION"
SANDY HOOK PROVING GROUND

Sandy Hook
August 22, 1918.

IN REPLYING REFER TO NO. 400.111
S.H. 2-1

Thomas A. Edison Company,
Orange,
New Jersey.

Sir:

1. We have received a letter from Engineering Division,
Ordnance Office (reference #D 400.111/358, Edison, Thomas A.)
advising that you have been granted permission to conduct certain
experiments at this establishment.

2. It is requested that you reply to this letter giving
this establishment authority to do work as directed by the re-
sponsible individual of the party conducting these experiments
and bill you for the same.

Very truly,

William A. Phillips,
Colonel Ordnance Dept., U.S.A.
Commanding.

By: *W.H.I.Jr.*
John Norton, Jr.
Capt. Ord. Dept., U.S.A.
Officer in Charge of
Planning Division.

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAYRE,
CHAIRMAN.
BENJAMIN D. THAYER,
VICE CHAIRMAN.
THOMAS ROBIN,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Aug. 22, 1918.

To the Members of the Naval Consulting Board :

Dear Sirs:

I enclose herewith lists as of August 15th giving the names, addresses, telephone numbers, etc., of the members and others connected with the Board; also list of the permanent technical committees and of such special committees as are at the present time active.

These lists are for the information of members and are not intended for general distribution.

If any errors or omissions are noted, please notify the writer and correction will be made in the next list.

Kindly destroy all previous lists.

Respectfully,

G. C. Trefry, Jr.

Ass't. to Secretary.

GT
Encls.

[ATTACHMENT/ENCLOSURE]

NAVAL CONSULTING BOARD Aug. 15, 1918.
PRESIDENT, Thomas A. Edison; CHAIRMAN, W. L. Saunders;
VICE-CHAIRMAN, E. B. Thayer; SECRETARY, Thomas Robins.
CORTLAND 1540;
MEMBERS
ADDICKS, LAWRENCE, 6 Church St., N.Y. City, Tel. Rector 3990; Res.
The Wolcott, 4 West 31 St., N.Y. City.
ARNOLD, COL. BION J., Army & Navy Club, Washington, D.C.;
Room 237, State, War & Navy Bldg., Washington, D.C.; 105 South
LeSalle St., Chicago, Ill.
BAEKELAND, DR. L. H., Harmony Park, Yonkers, N.Y., Tel. Yonkers 3436.
BRUNTON, D. W., 618 - 17 St. N.W., Washington, D.C., Tel. Main
2790, Branch 147; Res. Hotel Grafton, Washington, D.C.
COFFIN, HOWARD E., Hudson Motor Car Co., Detroit, Mich.
GRAVEN, ALFRED, 375 Park Ave., Yonkers, N.Y., Tel. Yonkers 1444.
EDISON, THOMAS A., Laboratory, W. Orange, N.J., Tel. Orange 6800;
Res. Llewellyn Park, N.J., Tel. Orange 257.
EMMET, W. L. R., General Electric Co., Schenectady, N.Y.
HUNT, A. M., U.S. Shipping Board, 1217 F St. N.W., Washington, D.C.;
U.S. Shipping Board, Plant Bldg., New London, Conn., Tel. New
London 1321; 55 Liberty St., N.Y. City, Tel. Cortland 4388; Res.
Hordeaux Apts., 549 Riverside Drive, N.Y. City, Tel.
Morningside 4960.
HUTCHISON, DR. M. R., Llewellyn Park, N.J., Tel. Orange 4710.
LAMME, B. G., Westinghouse Elec. Mfg. Co., E. Pittsburgh, Pa.; Res.
230 Stratford Ave., Pitts., Pa., Tel. Haland 1552 (Bell phone).
MAXIM, HUDSON, Maxim Park, Landing, N.J., Tel. Hopatcong 36;
698 St. Marks Ave., Brooklyn, N.Y., Tel. Bedford 2315;
N.Y. Office, 50 E. 42 St., N.Y. City, Tel. Vanderbilt 4539.
MILLER, SPENCER, 96 Liberty St., N.Y. City, Tel. Rector 3110;
Res. 217 Turret Ave., So. Orange, N.J., Tel. So. Orange 771.
RICHARDS, PROF. JOS. W., 618 - 17 St., N.W., Washington, D.C., tel.
Main 2790, Branch 147; Res. Hotel Brighton, Washington, D.C.,
Tel. North 3486; Lehigh University, So. Bethlehem, Pa.
RIKER, ANDREW L., Locomobile Co. of America, Bridgeport, Conn.,
Tel. Barnum 3900; Res. Fairfield, Conn., Tel. Barnum 3.
ROBINS, THOMAS, 13 Park Row, N.Y. City, Tel. Barclay 8800; Res.
Shippan Pt., Stamford, Conn., Tel. Stamford 159.
SAUNDERS, W. L., 11 Broadway, N.Y. City, Tel. Bowling Green 8424;
Res. 4 W. 40 St., N.Y. City, Tel. Vanderbilt 2227; (Summer)
112 Rockview Ave., Plainfield, N.J., Tel. Plainfield 2128.
SELLERS, M. B., 801 N. Azilum Ave., Baltimore, Md. TEL. MARSHALL 1765.
SPERRY, ELMER A., 40 Flatbush Ave. Extension, Brooklyn, N.Y., Tel.
Main 9700; Res. 1505 Albemarle Rd., Brooklyn, N.Y., Tel. Flatbush 34.
SPRAGUE, FRANCIS J., 165 Broadway, N.Y. City, Tel. Cortland 3806;
Res. 241 West End Ave., N.Y. City, Far Rockaway 3282;
THAYER, E. B., 42 Broadway, N.Y. City, Tel. Broad 1436; Res.
(Summer) Lawrence, L.I., N.Y., Tel. Far Rockaway 3282;
(Winter) 46 East 75 St., N.Y. City, Tel. Lenox 7506.
WEBSTER, DR. A. G., Clark University, Worcester, Mass.
WHITNEY, DR. W. R., General Electric Co., Schenectady, N.Y.;
Res. Tel. Schenectady 2382 J.
WOODWARD, DR. K. S., Carnegie Institution, Washington, D.C.; Res.
65 Dresden Apt., Conn. Ave. & Kalorama Rd. N.W., Washington, D.C.
ARMY AND NAVY OFFICERS IN CONNECTION WITH
SMITH, W. STROTHER, Rear Admiral U.S. Navy, Navy Department,
Washington, D.C., Tel. Main 2790, Branch 147.
MERSHON, R. D., Major U.S.R., 80 Maiden Lane, N.Y. City, Tel. John
6148; Res. 65 West 54 St., N.Y. City, Tel. Circle 2740.
WHITEHEAD, J. B., Major U.S.R., Johns Hopkins Univ., Baltimore, Md.;
Res. Cold Spring Lane & Linkwood Rd., Guilford, Baltimore, Md.
GRAY, G. F., Captain, Radio Development Section, Signal Corps,
Washington, D.C.
GOXHEAD, RALPH C., Lieut. O.R.C., Information Sec., Gen. Adminis-
tration Bureau, Ordnance Dept., G & B Sts., Washington, D.C.,
Tel. Main 2570, Branch 945.
BABCOCK, A. H., 65 Market St., San Francisco, Cal.
WESTERN REPRESENTATIVE

[ATTACHMENT/ENCLOSURE]

Aug. 15, 1918.

PERMANENT COMMITTEES OF THE NAVAL CONSULTING BOARD

AERONAUTICS, INCLUDING AERO MOTORS: Sperry, Chairman; Arnold, Baekeland, Coffin, Riker, Sellers, Webster.
AIDS TO NAVIGATION: Sperry, Chairman; Craven, Hunt, Woodward.
CHEMISTRY: Whitney, Chairman; Addicks, Baekeland, Richards, Sellers, Webster, Woodward.
ELECTRICITY: Sprague, Chairman; Addicks, Emmet, Lamme, Webster.
FOOD AND SANITATION: Baekeland, Chairman; Maxim, Thayer, Whitney.
FUEL AND FUEL HANDLING: Miller, Chairman; Addicks, Baekeland, Hunt, Hutchison, Maxim, Richards, Robins, Thayer, Webster, Whitney.
INTERNAL COMBUSTION MOTORS: Riker, Chairman; Coffin, Sellers, Sperry.
LIFE SAVING APPLIANCES: Miller, Chairman; Hutchison, Maxim, Robins.
METALLURGY: Richards, Chairman; Addicks, Lamme, Thayer, Whitney.
MINES AND TORPEDOES: Sperry, Chairman; Baekeland, Hutchison, Maxim.
OPTICAL GLASS: Baekeland, Chairman; Richards, Webster, Whitney.
ORDNANCE AND EXPLOSIVES: Maxim, Chairman; Baekeland, Hunt, Hutchison, Sprague, Thayer, Webster, Whitney, Woodward.
PHYSICS: Webster, Chairman; Addicks, Baekeland, Richards, Sellers, Whitney, Woodward.
PRODUCTION, ORGANIZATION, MANUFACTURE AND STANDARDIZATION: Coffin, Chairman; Addicks, Emmet, Lamme, Robins, Saunders, Thayer.
PUBLIC WORKS, YARDS AND DOCKS: Thayer, Chairman; Addicks, Craven, Hunt, Miller, Richards.
SHIP CONSTRUCTION: Sprague, Chairman; Hunt, Hutchison, Miller, Richards.
SPECIAL PROBLEMS: Lamme, Chairman; Addicks, Hunt, Hutchison, Sellers, Sperry, Sprague, Webster, Whitney.
STEAM ENGINEERING AND SHIP PROPULSION: Hunt, Chairman; Emmet, Lamme, Richards, Sellers.
SUBMARINES: Emmet, Chairman; Hunt, Hutchison, Saunders, Sprague.
TRANSPORTATION: Riker, Chairman; Coffin, Craven, Miller, Robins, Saunders, Thayer.
WIRELESS AND COMMUNICATIONS: Webster, Chairman; Whitney.

STANDING OR ACTIVE SPECIAL COMMITTEES

LABORATORY: Edison, Chairman; Addicks, Baekeland, Brunton, Hunt, Hobins, Sperry, Sprague, Whitney, Woodward.
NOMINATIONS FOR NAVAL COMMISSIONS: Thayer, Chairman; Lamme, Sprague.
EDITING: Robins, Chairman; Coffin, Sprague.
STUDY OF ANTHRACITE COAL BURNING: Hunt, Chairman; Hutchison, Miller, Saunders.
STUDY OF PROVIDING FOR AMMONIUM NITRATE SUPPLY: Baekeland.
DEVELOPMENT OF RUGGLES ORIENTATOR: Robins.
TO TAKE UP WITH NAVY DEPARTMENT PROPOSITIONS UNANIMOUSLY RECOMMENDED BY THE BOARD AND UNFAVORABLY CONSIDERED AND WHICH THE BOARD DESIRES RE-OPENED: Woodward, Chairman; Robins, Thayer.

Sandy

AUGUST 23, 1918.

Commanding Officer,
Sandy Hook Proving Grounds,
Sandy Hook, N.J.

Dear Sir: Attention Major Kirk:

The Chief of Ordnance, as you know, has taken pleasure in extending to me and my assistants, the facilities of the Sandy Hook Proving Grounds.

My Assistant, Mr. H. H. Holland, tells me that there will have to be some slight expense entailed down at your grounds before he can proceed and I am just writing to confirm his conversation to you that it will be perfectly all right to bill me with any charges ensuing therefrom, properly approved by my representative.

Thanking you for your courteous cooperation, I am,

Yours very truly,

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN B. THAYER,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

August 30, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

As proposed at the last meeting, the next meeting of the Board will be held at the works of the Locomobile Co. of America, at Bridgeport, Conn., on Saturday September 7th.

On the arrival at Bridgeport at 10.01 of the train which leaves New York at 8.31 A.M., our members will visit the works of the Remington Arms Union Metallic Cartridge Co. and the Lake Torpedo Boat Co. After luncheon they will inspect the works of the Locomobile Co., including some special Government work of an interesting nature.

Will you kindly advise me, using the enclosed form, as to whether or not you will be able to attend the meeting.

Yours very truly,

Thomas Robins,
Secretary.

TR/gt

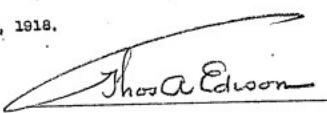
Enc.

[ATTACHMENT/ENCLOSURE]

I ~~do~~
do not expect to attend the meeting of the

Naval Consulting Board to be held at Bridgeport, Conn., on

Saturday, September 7, 1918.



The signature is handwritten in cursive ink. It starts with a large, stylized 'T' and 'A' joined together, followed by 'Edison' in a smaller, more standard script. A horizontal line is drawn under the signature.

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
September 1918**

Sept. 3, 1918.

Mr. F. L. Patterson,
Edison Lamp Works,
Harrison, N.J.

Dear Mr. Patterson:

I have just returned from a vacation this morning and find your favor of the 16th instant, with a sample of carbonized material from Mr. Howell. Mr. Edison has also returned today from a short vacation and I have handed him this material.

Mr. Edison wishes me to extend his thanks to Mr. Howell and yourself for the kind attention you have given in regard to carbonizing this and the previous bottle of material.

Yours very truly,

Assistant to Mr. Edison.

Sept. 8, 1918.

Mr. A. M. Hunt,
55 Liberty Street,
New York, N.Y.

Dear Mr. Hunt:

In pursuance of Mr. Edison's instructions, I am sending you, herewith, copies of two letters which he has written to the Secretary of the Navy under date of September 4th; also blue print of the table of curves referred to in the report of Lieut. L. S. Harris.

Mr. Edison thinks that you will be interested in these papers, especially as you were of assistance to Mr. Edison in connection with obtaining a cargo boat for the test reported.

Yours very truly,

Assistant to Mr. Edison.

A/5635.

Enclosures.

Sept. 6, 1918.

From: Thomas A. Edison, range, N.J.
To: Rear-Admiral Fletcher, Commandant, 7th Naval
District, Key West, Fla.
Subject: Subsistence - Paul D. Payne, C.E.(General)
U.S.S.K-3.

1. In accordance with a request which I made to the Secretary of the Navy, Paul D. Payne, C.E.(General), attached to U.S.S. K-3 was sent to Orange on detached duty, to complete an experiment upon which he was working with me when I was at Key West a few months ago.

2. His transportation and subsistence to New York and return were furnished, but he was not furnished with subsistence while on detached duty.

3. Payne has stated to me that he is without money to pay his board and usual expenses while here, and states that he has written to his Commanding Officer to forward check for present subsistence, but states that it has not yet been received by him. I have advanced Payne a moderate amount of money to help him out, on the understanding that it was an advance against the money for subsistence which he says he expects to receive through his Commanding Officer.

4. When the check is sent to him, I would suggest that be addressed to him care of the Edison Laboratory, Orange, N.J., and then my Cashier can take steps that I shall be reimbursed by Payne for the money advanced him.

5. For your information, I would add that Payne is not required to spend any money whatever for the expenses of the experiment I am making. That is all taken care of in my laboratory accounts.

Yours very truly,

$$5 \sqrt{32} * 3/16 * 16'$$

M^r Edison

Hawley has gone to
Sachem.

They are going out
on Sachem for tests tomorrow
morning, early.

Wants to know whether
you will go to the Sachem
tonight and go out with
them.

Meadowcroft

Sept 9/18

Day can't go this trip being
in hands of District till
Tuesday - E

September 10,
1 9 1 8.

Black Diamond Powder Company,
Pittston, Pa.

Gentlemen:-

We send samples of the special powder to the
Bureau of Explosives and have received from them a letter
and a report, copies of which are sent to you herewith.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.....

Sept 14 1916

Mr. Edison

I consulted some men about torpedoes who have been working in that field for several years and I learned that the turbine gets up to speed so nearly instantaneous that it is practically impossible to estimate the length of time it requires.

Some men who load the torpedoes into the tubes adjust their firing lanyards to release the starting lever when the torpedo is half-way out of the tube while others shorten the lanyard down leaving as little as 3 in. slack.

In Honolulu the torpedo men built a cage or box from which to fire a torpedo for test runs. They placed the torpedo in this cage and lowered it into the water from the dock then fired it by tripping the starting lever. No compressed air was used for launching it

from the boat. The torpedo simply left the boat on its own power and I was told by a man who helped to make the tests that as far as he could judge with his eye the torpedos had attained full speed by the time it was clear of the boat.

The pistol which ignites the alcohol for superheating the air is fired simultaneously with the opening of the starting valve therefore they claim that the only increase in speed after torpedo is clear of tube is that caused by the mechanism getting warmed up but this is not appreciable.

Dayne

September 12, 1918.

Hon. Josephus Daniels,
Secretary of the Navy,
Washington, D. C.

My dear Mr. Daniels:-

The Sachem is now in dry dock for
a week to make repairs.

Could you not exchange her for a
similar boat of about the same length but capable of a
higher speed?

In case of emergency the boat could
be taken away any moment. We experiment off the coast
of New Jersey.

Sincerely yours,

[ATTACHMENT/ENCLOSURE]

Joseph Daniels

The Sachem is now in
dry dock for a week.

Could you not exchange her
for a similar boat, ~~of about same length~~
~~but~~ capable of a higher speed
~~you not want her to be big~~

Can we time perfect the listening
device so a ~~motorboat~~ of
a speed of say 16 to 18 knots
can detect the presence of
~~an submarine before the latter~~

In case of emergency the boat
can be taken ~~far~~ away any
moment. We experiment off
the Jersey Coast - Edessa

ADDRESS ALL COMMUNICATIONS TO
UNITED STATES SHIPPING BOARD
WASHINGTON, D. C.

PLEASE REFER TO FILE
NO.

UNITED STATES SHIPPING BOARD
WASHINGTON

September 12, 1918.

Mr. Thomas A. Edison, President,
Naval Consulting Board,
13 Park Row,
New York City.

Dear Sir:

The Ship Protection Committee has reviewed copies of your correspondence with the Secretary of the Navy, of September 4th, which were referred to us by Mr. A. M. Hunt, one of the members of this Committee.

These matters are of great interest to the Committee and Mr. A. J. Mason and Rear Admiral A. R. Couden, U.S.N. (Retired) have been selected to confer with you on these subjects, after which the Committee will be more able to assist in their adoption by the Shipping Board.

Very truly yours,
SHIP PROTECTION COMMITTEE

John A. Donald
John A. Donald
CHAIRMAN.

THE NEW YORK EDISON COMPANY,
EDISON PLACE, NEW YORK CITY,
NEW YORK

5735

Copys

Ross

New York

WB

September 13th, 1918.

Send this to Ross

Mr. Thomas A. Edison,
Orange, N. J.

Attention of Mr. Wm. H. Meadowcroft.

Dear Sir:

In accordance with your request, I have examined carefully the schemes for detecting submarines as suggested by Mr. J. D. Ross. The underlying principle of all of these suggestions is the propagation thru space of an electro-magnetic field. The weakness of any device based on this principle is that the strength of such an electro-magnetic field decreases very, very greatly with distance from the source of the field. Furthermore, slight changes in a magnetic field at a distance from its source will not be detected by any exploring coil placed close to that source.

All three of these suggestions are exactly the same insofar as their electrical principles are concerned as the work which Mr. Stein and myself carried out at the time we were in Orange. These proposed methods, except the first one, are novel to me in the mechanical means employed. However, as above stated, the basic principle has been found to be barren of results for the purpose desired.

I am returning the papers herewith.

Yours very truly,

W. G. Walker.

WG.WK

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
CHAIRMAN.
BENJAMIN D. THAYER,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

(Sept. 16, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The next meeting of the Board will be held on Saturday next, Sept. 21, 1918, in the office of the Naval Consulting Board, adjoining the office of Rear Admiral W. Strother Smith in the new building of the Navy Department, Washington, D.C.

The preliminary meeting begins as usual at nine o'clock and the formal meeting at ten.

Very truly yours,

Thomas Robins
per G.T.

GT

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON, PRESIDENT.
WILLIAM L. SAUNDERS, CHAIRMAN.
BENJAMIN B. THAYER, VICE CHAIRMAN.
THOMAS ROBINS, SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Sept. 17, 1918.

To the Members of the Naval Consulting Board:

Dear Sirs:

I enclose herewith Plan Showing Assignment of Space in Navy Office Building. The new offices of the Board, at which as per previous notice our next meeting will be held on ~~XXX~~ Saturday next, Sept. 21, may be seen at the extreme top center of the plan; Room 3550 on the third floor.

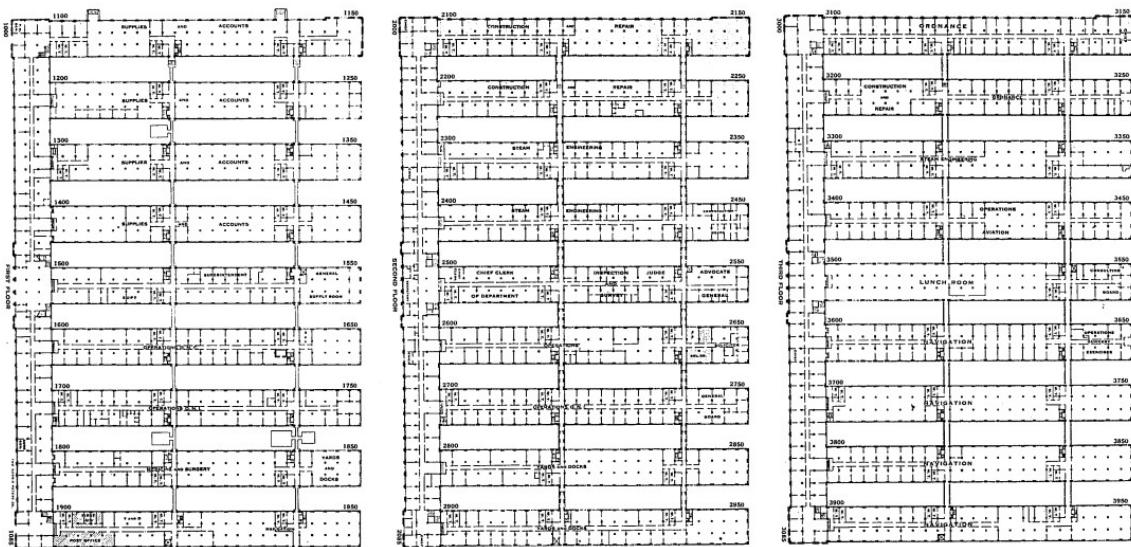
Very truly yours,

Thomas Robins

per G. T.

OT

[ATTACHMENT/ENCLOSURE]



Mr. W. H. Meadowcroft,
Edison Laboratory,
Orange,
New Jersey.

Dear Mr. Meadowcroft:

GK,
Attended to.
W.H.

Thanks for your letter of the nineteenth, and for looking after the shipment of the Foot Candle Meter. I recently made a visit to the Electrical Testing Laboratories in New York, and had Mr. Little make some measurements on candle power of "flares", and he suggested that I get one of these small instruments to make preliminary tests. You may bill the instrument to me personally.

Certainly, you may count on me to be in on swelling the quota of the laboratory for the Fourth Liberty Loan!

There is a possibility that I may have to take a Commission in the Army or Navy very soon. This laboratory has just been made a Unit of the American University Experiment Station of the War Department, Research Division, and I have been designated to act as Chief of the Unit.

Sincerely yours,
and also Yours for the Fourth Liberty Loan,

Jones Point
New York
September twentieth
1918

Bruce R. Silver

When he goes this
house he's bound to have
I don't want to have
my allowance to be
so much
when I go
I might have

Sept. 21, 1918.

General Electric Co.,
120 Broadway,
New York, N.Y.

Gentlemen: Attention Mr. D. H. Estabrook:

Referring to my telephone conversation with your Mr. Estabrook this day, I wish to ask if you would make an immediate shipment of a Foot Candle Meter to Mr. Bruce R. Silver, c/o Richmond Levering, Inc., Jones Point, N.Y., and charge the instrument to him.

Mr. Silver is doing some confidential experimental work for the Department of Justice, and he is perfectly good for the cost of this instrument. He was on Mr. Edison's experimental staff nearly all of last year, but at the request of the Department of Justice he was detailed to do this experimental work.

Trusting you will give this matter your immediate attention, I remain,

Yours very truly,
and also Yours for the Fourth Liberty Loan,

Assistant to Mr. Edison.

A/5718.

Sept. 23, 1918.

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D. C.

My dear Mr. Daniels:

Would it not be well to provide
me with a general pass that would give me admission
to any of the Navy Yards? I have no pass, even for
the Brooklyn Navy Yard, and I might find it desirable
to visit any one of the Yards in the course of my ex-
periments.

Yours sincerely,
and also Yours for the Fourth Liberty Loan,

A/6721.

Sept. 23, 1916.

Hon. Benedict Crowell,
Acting Secretary of War,
Washington, D. C.

My dear Mr. Crowell:

I expect to go down to Aberdeen
in the very near future, with two assistants, for
the purpose of testing out some 3" smoke bombs
that I have been developing, and shall be glad if
you will kindly issue instructions to your experi-
mental department thereto to afford me the necessary
facilities to shoot these bombs over the waters of
the river.

It will also be necessary for me to have
a pass for myself and my two assistants. Will you
kindly furnish me with such a pass or passes as may
be necessary.

Yours very truly,
and also Yours for the Fourth Liberty Loan.

..E720.

[ATTACHMENT/ENCLOSURE]

Wto to Budget
Crusade
and Agency

Ask for a pass for
self and two auxiliary
units Aerofon
& permission to have
several 3" smoke
bombs shot over
the waters of
River - from their
experimental kept at
that place -

Sept. 24, 1918.

Mr. J. D. Rose,
Supt. of Lighting,
City of Seattle, Wash.

Dear Sir:-

Referring further to your letter of August 11th, and its enclosures, I submitted the matter to two experts who have done a great deal of work on the detection of a submarine by electro-magnetic means. These experts spent a very considerable time with me in exploring this field very thoroughly, and I am enclosing copy of their report on your scheme.

I also return your papers and photostats herewith.

Yours very truly,
and also Yours for the 4th Liberty Loan.

A/5735.

Enclosures.

Sept. 24, 1918.

Mr. Bruce R. Silver,
Jones Point, N.Y.

Dear Mr. Silver:

I took care of your requirements
in regard to the Foot Candle Meter immediately on
receipt of your last letter, and trust that it will
reach you promptly.

Mr. Edison would like to have you bear in
mind the fact that you are being carried on his pay-
roll. Of course, he has not forgotten that Secre-
tary Daniels has authorized this, but it swells the
amount of Mr. Edison's expenses which come out of
the special appropriation. The point of this is
that if you take a Commission in the Army or Navy, that
would automatically take you off our pay-roll, as Mr.
Edison understands it. He is, therefore, depending
upon you to let him know if, and when, the change takes
place.

Yours very truly,
and also Yours for the 4th Liberty Loan.

Assistant to Mr. Edison.

N.B.O.S.

HLR

NAVY DEPARTMENT,

WASHINGTON,

September 24, 1918.

Mr. Thomas A. Edison,
Orange, N. J.

My dear Mr. Edison:-

The room No. 2742-44 assigned to you for your personal use in the new Navy Department Building in Potomac Park at 18th and B Streets, has been made ready for occupancy and is available for your use at any time you may desire it.

The contents of the room formerly occupied by you in the Navy Annex have been removed to the new room, and I trust you will find the new office both commodious and comfortable, when you are ready to make use of it.

With kindest regards,

Yours sincerely,

Joseph Daniels

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

O-Lu

NAVY DEPARTMENT
WASHINGTON

September 26, 1918.

Sir:

Referring to the request contained in your letter of the 23d instant, I am enclosing herewith a letter addressed to the Commandants of Navy Yards, which will secure for you admission to the navy yards whenever you desire to visit them.

Sincerely yours,

Joseph Daniels
Secretary of the Navy.

Mr. Thomas A. Edison,
Orange, N.J.

Mr. Edison just
came in his black
mem. book which he
carries in his pocket.
Harr
9/26/18.

WAR DEPARTMENT
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, D.C.

September 26, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

My dear Mr. Edison:

I am in receipt of your letter of September 23, 1918, and will arrange with the Engineering Division of the Ordnance so that you may be permitted, with two assistants, to try out your 3-inch smoke bombs at the Aberdeen Proving Grounds. It may be a day or two before you hear from the Ordnance Department, but they will arrange for the test as soon as possible.

Yours very truly,

Burke C. Correll
(Signature)
Acting Secretary of War.

YER-ACL

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
WILLIAM L. SAUNDERS,
BENJAMIN D. THAYER,
THOMAS ROBINS.

CHAIRMAN.
VICE CHAIRMAN.
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Sept. 26, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The next meeting of the Board will be held on Saturday, October 5, 1918, at the office of the Naval Consulting Board in the new building of the Navy Department, 18th & B St. N.W., Washington, D.C.

The preliminary meeting begins as usual at nine o'clock and the formal meeting at ten.

Very truly yours,

Thomas Robins
Member and Secretary.

G.T.

GT

September 28, 1918.

Commandant,
U. S. Submarine Base,
New London, Conn.

Dear Sir:-

I had my Secretary call your office on Thursday last to ask for certain information. He talked with Mr. Jan Dyke, who said that after looking up data he would write to me. I have not yet received any letter on the subject.

As you are possibly aware, I am conducting some special experiments on the detection of Submarines. Just now I am desirous of ascertaining the relative noise made by vessels under way. For instance, I am told that a submarine running submerged at 4 knots makes more noise (in a listening device) than an ordinary cargo boat running at 10 knots. Can you say whether or not this is true?

Can you give me roughly some approximate idea of the relative distances of audibility of submarines running submerged and other vessels?

An early reply will be of assistance at the present stage of my work.

Yours very truly,
and also Yours for the Fourth Liberty Loan.

A.

[ATTACHMENT/ENCLOSURE]

~~Capt C~~ Submarine
Stephen Van Dyke
aide to Commandant
New London-

Can you give me approximately
the distances a submarine
running submerged at 4
Knots how many yards
a submarine ~~does~~ a sub running
submerged at 4 Knots
makes more noise than
an ordinary Ocean going
(Cargo boat at 10 Knots)
~~what are distances.~~
Can you give roughly ~~distances~~
~~some idea of the~~
relation as to distances of
audibility

MEMBERS

Captain S. S. Robinson, U. S. N.

(Senior Member)

Captain John T. Tompkins, U. S. N.

Commander W. T. Tamm, U. S. N.

Commander C. S. McLowell, U. S. N.

Lieut. Comdr. J. M. Murphy

Lieut. Comdr. M. A. Libby, U. S. N.

Lieut. Comdr. T. S. Wilkinson, Jr.,

U. S. N.

Prof. G. K. Calhoun, U. S. N.

Lieut. H. R. Bogusch, U. S. N.

NAVY DEPARTMENT

SPECIAL BOARD

NAVAL EXPERIMENTAL STATION

New London, Connecticut

28 September 1918

ADVISORY MEMBERS

Lieut. Colonel R. A. Milikan,

U. S. A. Signal Corps

Dr. F. B. Jewett

Dr. W. R. Whitney

Mr. H. J. W. Fay

File SB-26887

WL

Listening Panel

Mr. Thomas A. Edison,
Orange,
New Jersey.

Dear Sir:-

With reference to your telephone conversation this date with Ensign Van Dyke, of the Naval District Base, I am pleased to submit the following information in regard to the relative ranges of audibility of a submarine running submerged at a speed of four knots, and an ocean-going cargo ship running at a speed of ten knots. It is apparent that the range of audibility of any sound in the water will vary with the type of apparatus employed in the detection of that sound. Accordingly there are included ranges of audibility for both mechanical and electrical detection apparatus, the latter being the more sensitive of the two. In all cases the ocean-going cargo ship will produce a greater noise than the submarine. Under ordinary weather conditions a mechanical type will enable the observer to detect the sound of the submarine running submerged at a speed of four knots at a distance of 2000 yards; will detect the sound of an ocean-going cargo ship running at a speed of ten knots at a distance of 12,000 yards. Under like weather conditions an electrical apparatus, which will enable an observer to detect the sound of a submarine running submerged at a speed of four knots at a distance of 10,000 yards, will detect the sound of an ocean-going cargo ship running at ten knots at a distance of 40,000 yards.

All the above comparative data is based upon the assumption that there are no other vessels in the vicinity of the observing ship to interfere with the detection of the submarine or ocean-going cargo ship. Ranges will also vary with the different types of ships and submarines, and with individual observers: those given above are the averages of many observations. It is hoped this information will be of value to you.

Very sincerely, *Morley*
Secretary

All communications should be accompanied by carbon copy and addressed to

Aberdeen

Mr. [unclear]

To insure prompt attention,
In replying refer to
ED
No.
Attention of

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
ENGINEERING DIVISION
WASHINGTON

Sept. 26, 1916

RECEIVED
SEP 26 1916
U.S. WAR DEPT.

Mr. Thomas A. Ellison,
Orange, N.J.

Dear Sir:-

1. In compliance with the request of the Acting Secretary of War, the Commanding Officer at Aberdeen Proving Ground, Aberdeen, Md., has been directed to furnish every facility for yourself and two assistants, for the purpose of testing the 3" smoke bombs invented by you.

2. It is desired that this letter be presented by you to the Commanding Officer, Aberdeen Proving Ground, on arrival, for the purpose of identification.

By direction of the Chief of Ordnance.

Respectfully,

James E. Billard
Colonel, Ord. Dept., U.S.A.

JEB

NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT;
WILLIAM L. GAUDET,
VICE-PRESIDENT;
BENJAMIN D. THAYER,
Vice-Chairman;
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

ANNOUNCEMENT

Suitable space having been provided for the Naval Consulting Board in the new building of the Navy Department, at Washington, D.C., the preliminary examination of inventions, which heretofore has been conducted in the New York office, has been transferred to Washington, where it will be directed by our resident member, Mr. David W. Brunton.

All correspondence relating to inventions should be addressed as follows:

Naval Consulting Board,
Navy Department,
Washington, D.C.

NAVAL CONSULTING BOARD,

THOMAS ROBINS,
Member and Secretary.

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
October 1918**

ADDRESS REPLY TO
THE SECRETARY OF THE NAVY
AND REFER TO INITIALS
AND NO.

NAVY DEPARTMENT

Op-14-A-ES-9/26

28905-1137

WASHINGTON

GCT 1 1918

file

My dear Mr. Edison:

Replying to your letter of Sept. 12th, 1918, in which you refer to the U.S.S. SACHEM, in dry dock, and ask if it will be possible to exchange her for a similar boat of about the same length but capable of a higher speed, I have to say that no vessel of this character is now available, the SACHEM being a better vessel than any other available. If at any time a fast vessel possessing the other characteristics undoubtedly required to make the vessel of use to you becomes available, I will have your request in mind and, if possible, make the exchange you request.

Sincerely yours,

W.B. Benson

Mr. Thomas A. Edison,
Orange,
New Jersey.

NAVAL CONSULTING BOARD

THOMAS A. EDISON, PRESIDENT,
WILLIAM L. SAYLERS, CHAIRMAN,
BENJAMIN B. RICHARDS, JR., VICE CHAIRMAN,
THOMAS ROBIN, SECRETARY.

OF THE UNITED STATES

OFFICE OF
LAWRENCE ADDICKS
6 CHURCH STREET
NEW YORK

A-235.

New York, N. Y., October 3, 1918.

TO THE MEMBERS OF THE NAVAL CONSULTING BOARD:

I enclose herewith copies of the discussion of my motion to abolish the standing technical committees of the Board.

Since then I have received Mr. Edison's comments, reading: "Good; now they will get results." Also a letter from Prof. Richards, reading in part: "I did not receive your letter of September 18th after my return here after our Saturday meeting. You will understand, therefore, that I had had no notice ----- That was the principal reason why I urged that more time be given to consider it, and not that I was greatly opposed to it."

Very truly yours,

Aero

[ATTACHMENT/ENCLOSURE]

Extract from notes taken at meeting of Naval Consulting Board
held on September 21, 1918.

Relative to proposition of Mr. Lawrence Addicks to abolish
the permanent technical committees of the Board.

Mr. Addicks. I have been of the opinion for some time that our whole Committee system was wrong, and in the last four weeks I have taken occasion to discuss this with quite a number of members and have come rather to the conclusion that in this proposed motion I was simply making expression of a general opinion. I, therefore, offer the following motion:

That all present standing technical committees of the Board be hereby abolished and that each new problem be hereafter entrusted to the member in the opinion of the Chairman or his delegate best qualified to deal with it at the time being.

In presenting that motion I have several things in mind. In the first place our present committee system imposes certain handicaps upon individual effort, and it seems to me that the work of this Board is being done at the present time by individuals. We were chosen as individuals in the first place and I do not think we work well on committees. I do not believe that one of us could say at a moment's notice just what committees he is a member of.

There are other objections to the committee system. We should play the game according to the rules, and that means that under the present system if a problem comes up it should be referred to the chairman of the appropriate committee. Now let us suppose that Mr. Hunt for example were chairman of the fuel handling committee. Let us suppose that a recommendation comes in here for something for powdered coal. Now it is not fair to Mr. Hunt and to the

[ATTACHMENT/ENCLOSURE]

problem itself to be referred to him because he says he does not believe in its development. Now it seems to me a cardinal point to put the development of a thing into the hands of a man who has faith in it and believes in it. I think there are times when some of us have leisure and other times have not leisure, so the man it is right to have a problem to to-day may not be the right man a month from to-day. Therefore, I think we should all recognize that what we do now illegitimately should be made legitimate, and I, therefore, offer this motion as read.

Mr. Thayer seconded the motion.

Mr. Emmet. I should think Mr. Chairman that like other bodies it would be necessary to have committees for special purposes, but I understand the idea is to abolish the permanent committees. I am rather in favor of that, for it is my experience that engineering as such can never be done by committees. They may discuss it or standardize it or approve of it, but they cannot do it. Moreover it is extremely hard for these committees to get together. They almost never meet and if they do meet they get together at very great trouble and very little is accomplished. I have been at one or two meetings, and practically none of them amounted to anything.

I have been a good deal troubled about the usefulness of this Board and about my status as a member of it from the beginning, because I have a vague feeling that I am not doing my duty and I do not like to be in a position where something is expected of me which I am not delivering. But I believe that I am accomplishing something to which membership in this Board in a way contributes,

[ATTACHMENT/ENCLOSURE]

because I am doing a lot of work for the Navy and it has brought me into contact with people whom I otherwise might not have come into contact with.

My idea is that engineering has got to be done individually. We have a very fine lot of engineers, but I believe that as in other such things they must individually acquire influence and we cannot as a Board expect to gain authority and influence in the Navy. We can individually acquire influence, and if we do so the Navy will pay attention to us, but I believe that the more we act individually and the more we try to be individually responsible for our recommendations and statements, the more respect we will acquire, because our joint opinions are likely not to be sufficiently definite to be valuable.

Dr. Backland. Mr. Chairman, I am entirely in favor of the notion of Mr. Addicks, and what Mr. Emmet says I know personally has been very true in several cases with which I was connected. For instance I am a member of the committee on ordnance and explosives. That like all committees is so general that we hardly find two members of the committee equally competent to pass on the different subjects which it embraces. I am always getting referred to me matters of small arms and rapid fire guns about which I know absolutely nothing, and I simply have the trouble of writing and saying "I am so with all the other committees and their members. It is rather embarrassing for me to have to endorse or to express an opinion or to vote on a subject where I have declared myself incompetent. If I could keep my responsibility to the chemical side of it it would be easy enough. I believe that that recommendation

[ATTACHMENT/ENCLOSURE]

of Mr. Addicks will simply confirm and legalize a matter of practice which we really have adopted long ago, and if we have not adopted it we will be of very little service in this Board.

Mr. Miller: Cannot everything that Mr. Addicks wants done be done without abolishing the committees? I remember having sat at meetings of the transportation committee two or three times, and I am very certain that it was not a case of one man knowing it all. In this instance I think the committee did excellent work. Suppose now that we just take the next step mentally and we pass that resolution. What are you going to do about it? Who gets these various inventions? Mr. Brunton or Admiral Smith? Now if we authorize them to use their judgment respecting the obtaining of an individual opinion or four or five individual opinions, have not we given to Mr. Brunton and Admiral Smith exactly what Mr. Addicks wants? Now I have found in the work of my committee that I have been practically following Mr. Addicks' idea for several months. When I have a question that I want to pass around among a certain committee I arranged the order of circulation with the expectation that the first member mentioned will write the opinion, for I have found a great disposition to say "Me too". I have cases in which the first man expressed the opinion I expected and the next man agreed with it but the third man took the opposite side and the first man's report did not avail. Therefore, my experience has proved to me that a one man opinion is not enough. It must be confirmed. Admiral Smith made a very excellent suggestion. He said, I

[ATTACHMENT/ENCLOSURE]

propose to send the same question to three different people, getting independent opinions, and that information will come to me. Now that can be successful only if Admiral Smith knows who is who and what it what. I want to see the schedule, I want to know how they are going to write it down, what is the character of questions for which such and such a man is going to be nominated. I know well enough a candidacy proposition would come to me because there is nobody else that I know of knows anything about it, and if it was a belt conveyor it would go to Mr. Robins.

Let them present that list at the next meeting and then we can decide as to the working of the thing on the plan which he proposes. At any rate I do not want to see the committees abolished to-day, but I do want to authorize Mr. Brunton or whoever passes out these things, to use that procedure as suggested at their discretion.

Mr. Addicks: I would like to answer a couple of Mr. Miller's points. In the first place the object of abolishing present committees is really to relieve Admiral Smith and Mr. Brunton of their present embarrassment in going round the chairman of the committee. By abolishing that position of the chairman, it allows each question to be dealt with on its individual merits. Now as to the question of a committee to deal with each individual case, that is really what I have in mind, but I think it is wiser to allow the member to be selected to deal with the problem and let him associate with himself such members as he wants for that particular thing. He can ask other members to decide with him or he can decide he wants to do it all himself. The present

[ATTACHMENT/ENCLOSURE]

system really ties down whoever is dealing out the problems. He either has to use various forms of diplomacy or run the risk of offending somebody and it is to prevent that that I bring the resolution.

Mr. Sengoku: It is the recommendations in mass which carry no particular weight. There are few matters which have had any weight whatever with either the Navy Department or the Navy. The Navy does pay attention to the work of individuals. It pays practically no attention to the recommendations of a committee or of the Board itself. Even in the one case where a special problem was put up to us by the Secretary of the Navy, we have found how perfectly useless the recommendation of the Board was. The opinion of an individual blocked the recommendation of the Board. So far as I am concerned I am giving up practically all my time to Naval matters. So far as I am individually concerned I have all the problems I want to tackle, but I think the criticism of committees is precisely a criticism of the Board; that matters cannot be worked out as a whole.

Dr. Hutchison: Why cannot that be solved by the man recommending it himself? Every man on this Board has some particular bug and why not let a man select himself with the approval of the chair?

Mr. Lemire: There is one point I think the present Board is defective in. That is nobody knows what relation each of us holds to engineers outside of the Board. We are supposed to get in outside advice. Perhaps 80% of the work I have done is with people who are not on the Board. It seems to me

[ATTACHMENT/ENCLOSURE]

that somebody ought to have a list not only of members but of other men with whom each can get in touch. Apparently nobody knows just what connections I have, and for instance they might, therefore, in putting up a problem miss me, and it seems to me that somebody here ought to have the information as to what field each member ought to cover, so that you will not miss the right man.

Mr. Thawer. I seconded Mr. Addicks' motion, but took it for granted that Mr. Addicks did not mean that a member designated by the chairman would pass upon that proposition individually but would automatically become the chairman of what is practically a special committee on that subject. What was your idea as to how the men should be selected? Is everything to come to the chair? If so, I can see where he will be buried.

Mr. Addicks. I had in mind the larger problems. There is say a certain air bomb problem. If I were the chair and id not have plainly before me the right men I would send around a circular letter asking each if he was interested and thought he could make progress on it. After he got the replies the chairman would put them together and pick out, taking all conditions into consideration, the one whom he would choose.

Prof. Richardson.

Your motion is directed mainly to the larger questions, and would not be very -- -

I move Mr. Chairman that the consideration of this resolution be postponed until the next meeting.

[ATTACHMENT/ENCLOSURE]

Mr. Miller seconded the motion, which was carried.

Mr. Brewster. We must have a very well thought out method of getting the possibly valuable inventions to the right members of the Board for consideration. I think that perhaps Prof. Richards is right; that the members ought to be free to refer problems of that kind to distinguished scientists in whatever line the invention might belong.

Mr. Sperry. I have done that quite a number of times, and I know on one occasion the secrecy of the thing was called into question, but I think the secret was just as safe in their hands as it was in mine. The point is to get at the fact; get at someone who knows that particular thing.

Mr. Sawyer. There is one point in this matter, and that is the question of appropriations. Now a committee takes care of appropriations, and all the members work on the same account. But if three or four members were working on the same problem, each would seemingly have to have a different appropriation. That is a matter which must be worked out.

The discussion here ended.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN G. THAYER,
VICE CHAIRMAN.
THOMAS ROBINSON,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Oct. 3, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The enclosed copy of an order signed by the Secretary of the Navy is sent to the members in accordance with letter received from Admiral Smith as follows:

From: Secretary of the Navy - Inventions.
To: Naval Consulting Board, attention of Secretary.

SUBJECT: Naval Consulting Board office in New Navy Building and communications with this office and the Board and its members.

1. There is forwarded, herewith, thirty (30) copies of an order signed by the Secretary of the Navy for information of the Members of the Board.

(signed) W. Strother Smith
Rear Admiral, U. S. Navy.
By direction.

Very truly yours,
Thomas Robins
by G. T.

GT
Enc.

[ATTACHMENT/ENCLOSURE]

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT
WASHINGTON

September 13, 1918.

From: Secretary of the Navy.
To: Chief of Operations, all Bureaus and offices in the
Navy Department and to the Naval Consulting Board.
SUBJECT: Naval Consulting Board office in New Navy Build-
ing and communications with this office and the
Board and its members.

1. The office of the Naval Consulting Board, under
the direction of Mr. D. W. Brunton, Member in charge, for
the examination of inventions and for all communications to
the Board and its Committees, has been established in Room
3547 and adjoining rooms in the New Navy Building adjacent
to the office of the liaison officer, Rear Admiral W. Strother
Smith, U. S. N.

2. The records and files of all inventions, devices
and ideas presented both to the Navy Department and the
Naval Consulting Board will be kept in the file room of the
"Secretary of the Navy - Inventions", connected with the
office of the liaison officer above mentioned.

3. For better coordination of work, more complete
record and easier reference, it is directed that all
communications between the Navy Department and any of its
Offices or Bureaus both to and from the Naval Consulting
Board be addressed "Secretary of the Navy - Inventions".

4. If practical, a copy of the action of any Bureau
on any invention will be sent to the above officer for record.

/S/ Josephus Daniels.

October 7, 1918.

Capt. Warren S. Harris,
U. S. S. Sachem, S. P. 198,
New York, N.Y.

Dear Captain Harris:

At Mr. Edison's request, I am writing to you to introduce Mr. A. H. Hunt, a Member of the Naval Consulting Board. Mr. Hunt has some special device concerning the burning of coal in a special manner and Mr. Edison thinks it would be well for you to try this under one of your boilers.

Mr. Hunt is also very much interested in the sea anchor and Mr. Edison says that you can explain the whole thing to him and show him any parts that you have.

Yours very truly,

Assistant to Mr. Edison.

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT
WASHINGTON

WSS/VR

October 7, 1916.

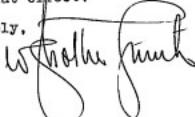
My dear Mr. Meadowcroft:

The Secretary told me today that he wanted me to go up to Orange and have a conference with Mr. Edison so as to get information regarding Mr. Edison's experiments with a view to getting quick action thereon also to get material for the Secretary's annual report.

I can leave here almost any night and be in Orange by office hours, say ten o'clock in the morning the next day and spend as much of the day or as many days as Mr. Edison wants, but I think that he can tell me all he wants to impart in a very short time.

Will you please arrange with Mr. Edison the day that will be most convenient to him and either call me on the phone or wire me to that effect?

Very sincerely,



Mr. Wm. H. Meadowcroft,
Edison Laboratory,
Orange, N. J.

October 8, 1918.

::PERSONAL::

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D. C.

My dear Mr. Daniels:

I want to call your attention to the fact that the hydrogen detector for preventing explosions in Submarines, which was admitted by the heads of the Department as perfect for the purpose, but turned down as it was asserted to be fragile, and, therefore, not practicable, has been in an operating Submarine at Key West for the last seven months, and is still in good condition.

I also want to call your attention to the fact that it is only in the last month that Chlorine Masks, intended to save the men from the Lead Storage Battery accidents, have been received at Key West. This was suggested by me nine months ago. The Army had them in stock at the time I made the suggestion.

Yours sincerely,
and Yours for the Fourth Liberty Loan.

A.

[ATTACHMENT/ENCLOSURE]

I want to call your attention that the hydrogen
Detector for preventing Explosions in Submarines
which was admitted by the heads of
Dept as perfect for the purpose but turned
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an operating submarine at Key West
for the last 7 months, + is ~~now~~
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it is only in the last month that
Chlorine Masks to save the men from
The Lead Battery accidents has been
received at Key West. This was
suggested before nine months
ago. The army had them in stock
at the time I made the suggestion —
Edison

October 8, 1918.

Chief of Ordnance, U.S.A.
War Department,
Washington, D. C.
Atten: Captain B. E. Estes:

Sir:-

It gives me pleasure to recommend for a Commission,
Mr. William G. Walker of ~~Glendale, Calif.~~ New York City. He was associated
with me for about two months on some special experimental
work for the Government, and in the course of that work
displayed a high degree of intelligence, ability and applica-
tion.

Respectfully yours,

A/5787.

October 9, 1918.

Rear-Admiral W. Strother Smith, U.S.N.,
Navy Department,
Washington, D.C.

My dear Admiral:

Your letter of the 7th instant
came to hand this morning, and I immediately took
it up with Mr. Edison. As a result, I sent you
the following telegram:

"***** Mr. Edison says glad
to see you at any time most con-
venient to yourself. He is here
every day. Please wire me when
you decide to come"

Awaiting receipt of advice from you, I
remain,

Yours sincerely,
and Yours for the Fourth Liberty Loan,

Assistant to Mr. Edison.

A/5794.

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON
PRESIDENT.
WILLIAM L. SAUNDERS,
Vice President.
BENJAMIN D. THAYER
Secretary of the Board.
THOMAS ROBINS
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

October 9, 1918.

To the members of the Naval Consulting Board:

Gentlemen:

In accordance with the Board's decision, our next meeting will be held at Aberdeen, Md., on Saturday, October 19.

Members from Washington should take the B. & O. train leaving at 7.40 A.M., reaching Aberdeen at 9.21. Other members who spend the night at Baltimore or arrive there in the morning by sleeper should take the same B. & O. train, which leaves Baltimore at 8.35 Camden Station, or 8.40 at Mount Royal Station.

There is another train, on the Pennsylvania, which leaves Baltimore at 8 A.M., reaching Aberdeen at 8.41, but I am unable to ascertain the distance between the Pennsylvania and B. & O. Stations at Aberdeen, and would therefore recommend if any members should reach Baltimore by the Pennsylvania R. R. they transfer to the B. & O. R. R., Mt. Royal Station, a short ride by taxicab.

Several members have announced their intention of spending Friday night at Baltimore. If it is desired, I should be glad to arrange for hotel accommodations for them, provided I am notified not later than Friday noon of this week.

Will you kindly notify me of your intentions at the earliest possible moment, using the enclosed form.

Yours very truly,

Thomas Robins,

per G.T.

TR/gt
Enc.

[ATTACHMENT/ENCLOSURE]

Oct. , 1918.

I ~~should~~ attend the meeting at Aberdeen,
shall not

Md., on Saturday, October 19.

Please engage accommodations for me
do not engage
at a hotel in Baltimore for Friday night.


H. A. Edwards

October 10, 1918.

Rear-Admiral W. Strother Smith, U. S. N.,

Navy Department,

Washington, D. C.

My dear Admiral:

Allow me to hand you herewith our Laboratory bill for experimental work done by Mr. Edison covering a period, July 31st, 1918 to September 30, 1918, at cost, amounting to \$10,037.67.

This bill is sent in duplicate, certified to by Mr. Edison.

When the check is ready, you can forward it to me as usual.

Yours very truly,
and Yours for the Fourth Liberty Loan,

Assistant to Mr. Edison.

Enclosure.

October 10, 1918.

Hon. Benedict Crowell,
Acting Secretary of War,
Washington, D. C.

Dear Mr. Crowell:

Allow me to hand you herewith our
Laboratory bill for experiments done by Mr. Edison,
at the request of Secretary Baker, covering a period
July 31st, 1918 to September 30th, 1918, at cost,
amounting to \$4,342.61.

This bill is sent in duplicate, certified
to by Mr. Edison.

When the check is ready, you can forward
it to me as usual.

Yours very truly,
and Yours for the Fourth Liberty Loan,

Assistant to Mr. Edison.

Enclosure.

NAVAL CONSULTING BOARD

OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
Vice President.
BENJAMIN S. THAYER,
Secretary.
THOMAS ROBINSON,
Secretary.

OFFICE OF
LAWRENCE ADDICKS
6 CHURCH STREET
NEW YORK
A-264.

New York, N. Y., October 10, 1918.

Thomas A. Edison, Esq.,
Chairman, Naval Consulting Board,
West Orange, N. J.

Dear Mr. Edison:-

PROBLEMS:

You probably know that I have recently returned from a long stay abroad, three months of which were in the general war zone, having been through the Mediterranean and the English and Irish Channels.

I brought back several fairly definite problems which I have outlined to the Board; but, owing to your absence from the meetings, they may not have reached you, and I thought you might be interested to hear of them.

MARKER SHELL:

When the periscope is sighted it would be desirable to have a shell which could be put in an ordinary 3" rifle, which, upon reaching the water, will light a torch; burn not less than 5 minutes. The object of this is to place a light in the ocean where the depth bomb should be dropped when the destroyer has time to reach the spot.

DEPTH GUN:

A destroyer occasionally sights a periscope inside its normal turning of 700 yards, which means that it has to go through a double evolution to reach the spot, as it cannot turn directly. In this connection it would be desirable

Thos. A. Edison - Sheet #2. A-264 - Oct. 10, 1918.

to fire a normal depth bomb from a gun with a maximum range of 700 yards. This is now done on a very small scale by the Y guns now mounted on our chasers, the can obtaining the depth charge being bolted to a mandrel which is inserted in the gun. It is also being done on the British ships for perhaps 200 yards, but the gun tends to kick so severely as to damage the deck.

MAGNET TORPEDO DETONATOR:

Considerable success has attended the hunting of submarines by night by a submarine. In this case the enemy is on the surface and is destroyed by a torpedo. The effectiveness of the torpedo could be greatly increased if it were arranged so that it could be magnetically detonated in case it missed its mark but came within a reasonable distance. Captured German torpedoes indicate that the enemy already possesses such a device.

MINES:

While immense success has attended the use of a mine barrage in the English Channel and North Sea, the perfect mine is yet to be devised. What is desired is a mine which will stand a 5 knot tide and maintain an approximately equal submersion at all stages of tide. The mine need not come to actual contact with the object to be destroyed, as it has a sure range of action of certainly 20 ft. The present mines have, as you doubtless know, tentacles of bronze firing by voltaic action, but apparently they have much trouble with the slack on the anchorage.

LISTENING DEVICE CUT-OFF:

One difficulty attached to the use of listening devices is the terrific noise and possible permanent injury to the listener in case he happens to be using the device when a depth bomb is destroyed in the vicinity. A device which would automatically suppress these abnormal heavy waves, particularly

Mr. Thos. Edison - Sheet #3 - A-264 -
October 16, 1918.

in the mechanical listening device, is desirable.

USE OF LISTENING DEVICES ON AIR SHIPS:

The general problem of making available the present listening devices in connection with either the dirigible or a seaplane has great possibilities. This is a problem on which very little has been done as yet. The advantage over a boat is that the enemy is unable to hear anything himself, whereas an approaching destroyer gives him ample warning. The idea would be to use the air ships as marker buoys, the actual depth charges being released by surface craft.

Yours very truly,

Ady

October 12, 1916.

Mr. Lawrence Addicks,
6 Church Street,
New York, N.Y.

Dear Mr. Addicks:

I have received your letter of
the 10th instant, and will reply seriatim:

MAGNET SHELL:

It seems to me there should be no difficulty in this. A regular Coston Light (Calcium Phosphide) could be combined with a regular shell.

DECK GUN:

It should not require much engineering ability to cushion the stress of the gun over several feet and distribute the stress over a considerable area of the boat.

MAGNET TORPEDO DETONATOR:

I doubt if the Germans have an effective device of this kind.

LISTENING DEVICE CUT-OUT:

In my opinion, the only effective way to prevent injury to the ear is the throwing overboard of a small (say, 4 pound) bomb at the same time, or two or three seconds before the main depth bomb. The small bomb should explode on touching the water. This could be heard over a large area and give sufficient time to withdraw the listening tubes.

The other problems are somewhat out of my line. One of our troubles here is that the Navy people are non-receptive of any ideas whatever if they

are put forth by civilians.

I am much obliged to you for sending the information in your letter.

[ATTACHMENT/ENCLOSURE]

Articles -

Spurs of 10 Rad

Marker shell - There is
no difference in this
a regular Cotton light
(Calcium phosphate) can be
combined with a
Regular shell

Deck guns - it will
not impinge much
engineering ability

to cushion the stress
of the gun over normal
foot + distribute the
stress over a considerably
area of the boat,

Magnetic torpedo device
I do not if common
have an effective
device -

Listening Cut out
The only effective way
in my opinion

[ATTACHMENT/ENCLOSURE]

3
to prevent injury to
User is the threading
overhead of a small
of 16 bomb ~~which~~
at some time ~~is~~
or 2 or 3 seconds
before the main ^{to}
(comb). The small ^{to}
bomb to explode
on touching the
water. This can be
heard over a
large area & gives

4
sufficient ~~time~~ time
to withdraw (isolating
tubes).

The other great coms
are some what out
of my line -
one of our troubles here is that Harry
is now occupying ~~the~~ ^{the} room which
~~he~~ ^{is} ~~now~~ ^{now} occupying for
you information -

You information -

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
VICE CHAIRMAN.
WILLIAM L. SAUNDERS,
CHAIRMAN.
BENJAMIN S. TOWNSEND,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Oct. 12, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

Due to the great increase of Spanish Influenza, which has appeared in malignant form at the Aberdeen Proving Ground, it has been decided by the Chairman to be inadvisable to hold the meeting there on Saturday, October 13th, of which notice was recently sent. This meeting has therefore been indefinitely postponed.

A special gathering of the Board will take place in New York at 11.30 the coming Monday morning, October 14th, for the purpose of meeting Sir Eric Geddes, First Lord of the British Admiralty. In connection with this the following telegram was sent yesterday to all members, and is hereby confirmed:

Secretary of the Navy has arranged that Sir Eric Geddes, First Lord of the British Admiralty, will meet the Board in New York next Monday morning, October fourteenth, at eleven thirty at the Engineering Societies Building, West thirty-ninth street. It is requested that all members be present. Mr. Edison will be there. Answer to Robins office.

W. L. Saunders, Chairman.

The place of meeting at the Engineering Societies Building will be the Board Room of the American Society of Civil Engineers.

Very truly yours,

Thomas Robins,
per G.T.

GT

Telegraph

Oct 12/18

Theo. Robins
13 Park Row
New York

Mr. Edison expects to be
at meeting on Monday,

W.H. Nicabowicoff

10/12/18
Sent W.H.
12:20 P.M.
W.H.N.

THE SECRETARY OF THE NAVY.
WASHINGTON.

October 14, 1918.

My dear Mr. Edison:

I thank you very much for your letter of October 8th, and I took this matter up at once with the heads of the Bureau. I have given instructions that all your suggestions shall have immediate consideration, and I suppose your views will have been carried out. I will write you shortly.

I have been hoping to see you lately, but have been trying to do two men's work.
Always

Faithfully yours,

John G. Schlesinger

Mr. Thomas A. Edison
Orange, New Jersey

October 1st, 1916.

Rear-Admiral E. Strother Smith, U.S.N.,
Navy Department,
Washington, D. C.

My dear Admiral:

I am sending you herewith copy of the report of Captain Harris concerning the test made with the sea anchor. As you already have the blue print, showing the curves mentioned in this report, it will not be necessary to send you another one at this time. Of course, if you want further prints, I shall be glad to supply as many as you wish.

Mr. Edison was much encouraged by your visit, and is now looking forward to early action.

Yours sincerely,
and Yours for the Fourth Liberty Loan,

Assistant to Mr. Edison.

Enclosure.

October 18, 1918.

My dear friend Brushear:

Last year you were good enough to lend me a Fiske Range Finder to be used in some of my experiments for our Uncle Samuel. It came in very useful, and as that phase of my work has gone as far as I can push it, I am now going to return the instrument to you. I have reported to the powers that be, but whether anything will ever come of it goodness only knows. Anyway, there is one thing I am sure of and that is my sense of thankfulness to you for your willing readiness to help out.

I have been plugging away on experiments for Uncle Sam ever since January of last year, and am still at it. It has given me a lot of new things to think of and I have enjoyed the work.

If you ever happen to be down in this direction, don't fail to drop in and see me. The latch string is always out to you.

With kind regards, I remain,

Your's sincerely,
also Yours for the Fourth Liberty Loan.

A.

Mr. John A. Brushear,
Pittsburgh, Pa.

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT
WASHINGTON

WSS/VR/26840

October 18, 1918.

My dear Mr. Meadowcroft:

I take pleasure in acknowledging your letter of the 15th forwarding a copy of the report of Captain Harris concerning the test made with the sea anchor. I will forward that to the correct office.

I have been talking over the result of my visit to Mr. Edison and it has been suggested that Mr. Edison make up a listening device suitable for installation on a submarine chaser and send the same to be attached to one of the vessels now located at New London for a series of trials in connection with submarines. I was so much impressed with the fine mechanical work and simplicity of design that I would like very much for it to be tested in comparison with other devices especially as it requires no alteration in a hull more than fitting a spar out from the bow.

If this meets with Mr. Edison's approval please let me know right away and I will forward the Sheer plan of a submarine chaser so that he can get the correct proportion.

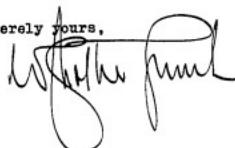
I am also taking steps to get an order for one to be placed either on a transport or a vessel being built under the cognizance of the Emergency Fleet Corporation.

I am sure that if the test at New London shows any good result that we could put one on a transport and obtain much quicker results than could be done by waiting for a ship now being built.

I am also taking up the other questions that I looked over, with the idea of placing one into immediate service for actual trial at sea.

Very sincerely yours,

Mr. Wm. H. Meadowcroft,
Edison Laboratory,
Orange, N. J.



NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON, PRESIDENT.
WILLIAM L. SAUNDERS, VICE-PRESIDENT.
BENJAMIN B. THAYER, VICE-PRESIDENT.
THOMAS ROBINS, SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

October 19, 1918.

To the Members of the Naval Consulting Board:-

Gentlemen:

The next meeting of the Naval Consulting Board will be held on Saturday, November 2nd, at the office of the Board in the new Navy Building, Washington, D. C.

The informal meeting begins at nine o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS,

Secretary,

For G. C. T.

October 21, 1918.

Rear-Admiral W. Strother Smith, U.S.N.,

Navy Department,

Washington, D. C.

My dear Admiral:

I have received your letter of October 19th. I can't spare the man to take the apparatus to New London to listen for submarines.

Perhaps I did not make myself clear in our conversation, but let me say once more that the apparatus is made only to listen for torpedoes and was never intended for detecting submarines.

If real progress is to be made I should have an order for four 9 foot sea anchors and four 10 foot sea anchors with the necessary rope; also for two booms and listening rods; with permission to put at least one listening device and sea anchor on a cargo boat now carrying coal from Norfolk to New England. This will not hold up the cargo boat a single minute.

Then I propose to have the old whitehouse torpedo, (of which our Government has many at Newport), shot out somewhere along the coast in heavy weather and do this many times and actually ascertain what can be done to hear and avoid them. I am certain that no torpedo can move within a mile of the cargo boat without the boat knowing it, no matter how stormy the sea.

When I have done this, I will take up the question of detecting the submarine itself. I make no claims as to this as I have never worked on it.

The cleanest, quickest way for the whole thing, if the Secretary will trust to my discretion, is for him to give me a letter authorizing me to do what is above stated, and with that letter I can get the things I want and get right on the job.

Yours sincerely,

A.

[ATTACHMENT/ENCLOSURE]

Dear Admiral W. Fletcher Smith

I have received your letter of
October 19th and can't spare the
men to take the apparatus
to New London to
listen for ~~submarines~~.
~~Perhaps I did not make myself clear~~
in our conversation, but let me say once more that
the Apparatus is made
only for ~~torpedoes~~
^{to listen} & was intended
for detecting ~~submarines~~
~~but I am sorry to~~
~~say~~

2
all of local
~~to make~~ necessary
~~with the~~ to be
made I should
have an order
for 4 four of ^{sea} anchors
& 4 four 10 of sea anchors
with the ~~recognition~~
ropes; also for two
Booms, & listening rods,
with ^{permission} a right to
put at least one

[ATTACHMENT/ENCLOSURE]

3

listening device and sea anchors
on a cargo boat
now carrying
Coal from Norfolk
to New England and
This will not hold
up cargo boat a
single minute,
Then I propose to
have the old ~~the~~
Whitlock's ^{or government} torpedo,
(of which ^{one} he has

4

Many at Kecoughtan
shot out somewhere
along the coast
in heavy weather
and this many
times & actually
ascertain what
can be done to
^{and avoid them} and
I am certain no
torpedo can move
within a mile of

[ATTACHMENT/ENCLOSURE]

the cargo boat within
the coast knowing it,
no matter how stormy
the sea is. When I
have done this,
I will take up
the question of detailing
the submarine to you.
I make no claims as to
this as I have never

worked on it,
I ^{quidus} cleaned away for
the whole thing, if
the sea will let me
to my desperation, it is
for him to give me a
letter authorizing me
to do what is ~~above~~ above
stated, & with that
letter I can get the
thing I want
and get right ⁱⁿ the job.

N.N.LS

NAVY DEPARTMENT

In reply refer to No. 1
OFFICE OF NAVAL INTELLIGENCE
BRANCH OFFICE
288 FOURTH AVENUE
NEW YORK
PERSONAL
END
CONFIDENTIAL.

SB:-12

October
Twenty-first
1918

Dear Mr. Edison:

I take great pleasure in enclosing herewith Identification Card No. 611, which has been issued to you by the Office of Naval Intelligence in Washington, D. C.

Will you be so kind as to sign the enclosed receipt and return to this office as soon as possible.

We are delighted that you have come on the list of those who are working in connection with this office.

Very truly yours,



Lieut.-Commander, USNRF.

Mr. Thomas A. Edison,
Orange,
New Jersey.

PETER COOPER HEWITT
10 EAST 33D STREET
NEW YORK, N.Y.
TELEPHONE
VANDERBILT 925

October 21st, 1916.

Mr. Thomas A. Edison,
Orange, N. J.

Dear Edison:-

I enclose copy of the readings taken in the helicopter test No. 5. I had hoped that you would witness a better one.

I find that there is a definite relation between the diameter, lift per horse-power and the exact horse-power a machine will take and give a given lift per horse-power; in other words, for a desired lift per horse-power, increase of diameter is necessary in order to be able to use additional horse-power.

I wish to say again how much I appreciated your taking the trouble to come over to see my machine, and also how much pleasure it gave me to see you and get your comments.

Very truly yours,

Peter Cooper Hewitt

[ATTACHMENT/ENCLOSURE]

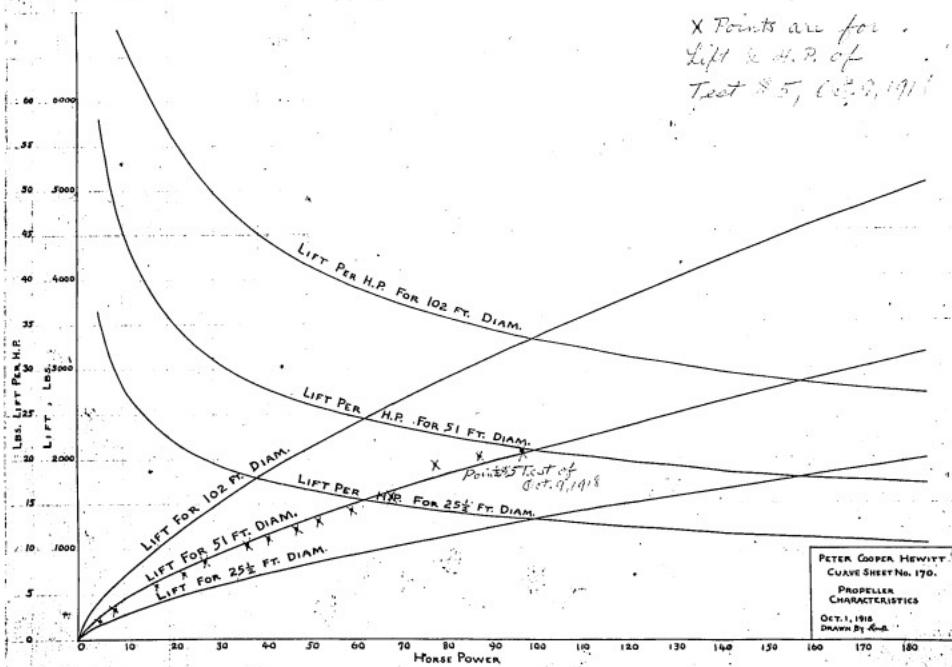
COPY
HELICOPTER No. 1.

*efficiency in lift
mean average drama
of blade 40 ft.*

Test No. 5, October 9th, 1918.

| R. P. M. | LIFT, lbs. | HORSE-POWER | LIFT per HORSE-POWER |
|----------|------------|-------------|----------------------|
| 17 | 170 | 2.78 | 61.2 |
| 19.75 | 230 | 4.22 | 54.5 |
| 24 | 330 | 7.1 | 46.5 |
| 31.5 | 570 | 15.3 | 37.2 |
| 38 | 780 | 23.8 | 33.5 |
| 40 | 890 | 27.8 | 32.0 |
| 44 | 1060 | 36.1 | 29.4 |
| 46 | 1160 | 41.8 | 27.7 |
| 48 | 1260 | 47.6 | 26.5 |
| 50 | 1350 | 53.8 | 25.1 |
| 52 | 1430 | 58.2 | 24.6 |
| 55 | 1610 | 69.6 | 23.1 |
| 58 | 1900 | 79.4 | 23.9 |
| 60.5 | 2030 | 88.0 | 23.1 |
| 63 | 2130 | 96.6 | 22.0 |

[ATTACHMENT/ENCLOSURE]



October 23, 1918.

Dr. Peter Cooper Hewitt,
18 East 33d street,
New York, N.Y.

Dear Doctor Hewitt:

Mr. Edison received your letter
of the 21st instant, together with copy of the read-
ings taken in the helicopter test No. 5, together
with the curve chart, and he wishes me to thank you
for sending same. He has read it with a good deal
of interest.

He has asked me to forward to you the
enclosed check for \$600.00, in accordance with his
understanding with you last Saturday.

Yours very truly,

Assistant to Mr. Edison.

A+

ADDRESS REPLY TO
THE SECRETARY OF THE NAVY
AND REFER TO INITIALS
AND NO.

Op-51-S.
27217-450

NAVY DEPARTMENT
WASHINGTON

24 October, 1918.

My dear Mr. Edison:

Referring to your letter of 8 October,
concerning hydrogen detectors and gas masks for submarines:-

It is found that both experimental and ser-
vice tests of hydrogen detectors and eliminators have been
going on for some time. I note what you say concerning the
record of your detection device in the submarine in saline
waters, and its performance will be given full considera-
tion.

The matter of supplying gas masks to submar-
ines has necessarily been one of priority, which no doubt,
you duly appreciate.

Very sincerely yours,

Jesse L. Daniels

Mr. Thomas A. Edison,
Orange,
New Jersey.

TAD

No.

United States Navy Yard,
NEW YORK, N. Y.

October 24, 1918.

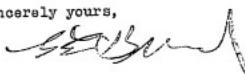
My dear Mr. Edison:

I gathered together what propellers I could find of from 20 to 22 inches diameter (which is the size for motor sailers) and tried them for pitch. They are all cast from the same pattern and to my ear appeared to be about the same pitch, that is about C, but they are so full of prominent overtones that I could not decide. So I got my friend, Mr. Mayland, who makes all the bells and gongs for the orchestras, to come in here with his standard bars and listen to them and he found one that he pronounced to be C[#]. He says that to raise the pitch we will have to take the pattern, thicken up the blades with wax, and cast a special wheel which we can easily do, if you wish it. I suppose that when the shaft is put in and bolted it will change the pitch of the combination but have not tried that yet.

Will you please let me know if you will want the bearings babbitted or just bored for a running fit, and whether you need a stuffing box in case the wheel is to be run immersed in water. Also please tell me about how long you want the shaft and if you need a coupling flange on it.

I hope to come down to Orange in a few days, if possible.

Very sincerely yours,



Mr. Thomas A. Edison,
c/o Edison Laboratory,
Orange, N. J.

5874

Henry C. Frick Educational Commission

JOHN A. BRASHEAR, PRESIDENT
W. LUCIUS SCARFE, SECY & TREAS.
CHARLES E. COOPER, VICE-PRES.
GEORGE W. GENWID
HON. JOHN D. STETSON
HON. JOHN D. BUFFINGTON
CLIFFORD S. CONNELLEY
MARTHA C. HOTT, COR. SECRETARY

OFFICE: 365 FRICK ANNEX
TELEPHONE GRANT 5580
HOME OFFICE: 1954 PERRYVILLE AVENUE
TELEPHONE CEDAR 330

PITTSBURGH, PA.

October 24, 1918.

My dear Uncle Tommy:-

Thank you for your syndid letter of October 16th. I have not asked the boys whether the range finder has been received or not, but it is all right anyway - just so you got the use out of it that was your wish. It is a delight to do anything for you.

No doubt you have been plugging away right along, and you will never stop plugging until you die and go to heaven, as I am sure you will, for the devil would not have anything to do with you. I am certain of one thing, however, that if St Peter does not give you anything to do there will be a strike organized, and then ---- well, I will not say what will happen!

Aside from this pleasantry, I am delighted to know you are still able to work, and what would we old fellows do if we did not have something to engage our minds. You still have a splendid companion to be with you and take care of you - the one I said ought to have half of your gold medal. I lost mine eight years ago, one of the most faithful, devoted, patient women that ever graced this old round world of ours, and it was a mighty fortunate thing for me that I had plenty to do since she left me. It seems that, as I got along in years, I have all the more to look after. My son-in-law is attending to the workshop, which is now devoted altogether to making apparatus for the army and navy, and I am giving a lot of time to educational matters, and have had entrusted to me a fund of half a million dollars which I, with a good commission appointed by myself, have been administering for the last eight years, for the benefit of the teachers and teaching in the public schools of our city. We have done wonderful work, and I am going to send your good wife a copy of the report of the Phoebe Brashear Club for 1917, which will give you some idea of the fun we are having in the use of this endowment.

Just now I am taking great interest in the education of the returned disabled soldiers, particularly in the industrial lines, and although I will be seventy-eight years

-2-

of age this day, one month hence, I would like to live a few years longer to help these good fellows who have done their best to knock him out of the Kaiser.

My only Alma Mater was an old red brick school house, and if it were standing to-day, I could pick out the brick which I leaned against, with my hand on my forehead, and -----! after smoking my first and last cigar.

But this yarn is too long, and I will wind up by telling you I have become acquainted with Mr. Hitchcock, his good mother, and his splendid wife, who is a sister to your own dear "best half," and it is a joy to spend a evening with them.

With kindly greetings to Mrs. Wilson, and ditto to yourself, I am,

Cordially yours,

Uncle John Brashears

See out o' prize that letter you wrote
done in 1887. - I wouldn't take
all that out of the last liberty
from 'em et!!

**NAVAL CONSULTING BOARD
OF THE UNITED STATES**

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
Vice President.
BENJAMIN B. THAYER,
Chairman of the Board.
THOMAS ROBBINS,
Secretary.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

October 26, 1918.

To the members of the Naval Consulting Board:-
Gentlemen:

I enclose herewith lists of the members
and committees of the Naval Consulting Board as
of October 19 and 21 respectively. Kindly de-
stroy previous lists.

Very truly yours,

THOMAS ROBBINS,
Secretary,
per S.

[ATTACHMENT/ENCLOSURE]

NAVAL CONSULTING BOARD Oct. 19, 1918.

PRESIDENT, Thomas A. Edison; CHAIRMAN, W. L. Saunders;
VICE-CHAIRMAN, B. E. Thayer; SECRETARY, Thomas Robins.
MEMBERS

ADDICKS, LAWRENCE, 6 Church St., N.Y. City, Tel. Cortland 1540;
Res. 518 North Broad St., Elizabeth, N.J., Tel. Elizabeth 3984.

ARNOLD, COL. BIRON J., Army & Navy Club, Washington, D.C.; 105
South LaSalle St., Chicago, Ill.

BAEKELAND, DR. L. H., Harmony Park, Yonkers, N.Y., Tel. Yonkers 3436.

BRUNTON, D. W., Naval Consulting Board, Navy Dept., Washington,
D.C.; Res. Hotel Graf ton, Washington, D.C.

COFFIN, HOWARD E., Hudson Motor Car Co., Detroit, Mich.

GRAVEN, ALFRED, East Pleasantville, N.Y., Tel. Pleasantville 383.

EDISON, THOMAS A., Laboratory, W. Orange, N.J., Tel. Orange 6800;
Res. Llewellyn Park, N.J., Tel. Orange 257.

EMMETT, W. L. R., General Electric Co., Schenectady, N.Y.

HUNT, A. M., 55 Liberty St., N.Y. City, Tel. Cortland 4389; U.S.
Shipping Board, 1217 F St. N.W., Washington, D.C.; U.S.
Shipping Board, Plant Bldg., New London, Conn., Tel. New London
1321; N.Y. City Res., Engineers Club, 32 West 40th St., Tel.
Vanderbilt 2150.

HUTCHISON, DR. M. R., Llewellyn Park, Orange, N.J., Tel. Orange 4710.

LAMBE, B. G., Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.;
Res. 230 Stratford Ave., Pitts., Pa., Tel. Hilland 1522 (Bell 'phone).

MAXIM, HUDSON, Maxim Park, Landing, N.J., Tel. Hopatcong 36; 698
St. Marks Ave., Brooklyn, N.Y., Tel. Bedford 2313; N.Y. Office,
50 E. 42 St., N.Y. City, Tel. Vanderbilt 4538.

MILLER, SPENCER, 96 Liberty St., N.Y. City, Tel. Rector 2110;
Res. 217 Turrell Ave., So. Orange, N.J., Tel. So. Orange 771.

RIKER, ANDREW L., Locomobile Co. of America, Bridgeport, Conn.,
Tel. Barnum 3900; Res. Fairfield, Conn., Tel. Barnum 3.

ROBINS, THOMAS, 13 Park Row, N.Y. City, Tel. Barclay 8600; Res.
Shippan Pt., Stamford, Conn., Tel. Stamford 159.

SAUNDERS, W. L., 11 Broadway, N.Y. City, Tel. Bowling Green 8424;
Res. 4 W. 40 St., N.Y. City, Tel. Vanderbilt 2227; (Summer)
112 Rockview Ave., Plainfield, N.J., Tel. Plainfield 2126.

SPERRY, ELMER A., 40 Flatbush Ave. Extension, Brooklyn, N.Y., Tel.
Main 9700; Res. 1505 Albemarle Rd., Brooklyn, N.Y., Tel. Flatbush 34.

SPRAGUE, FRANK J., 165 Broadway, N.Y. City, Tel. Cortland 3806; ..

THAYER, B., 42 Broadway, N.Y. City, Tel. Broad 1436; Res.
(Summer) Lawrence, L.I., N.Y., Tel. Far Rockaway 3263;

(Winter) 46 East 79 St., N.Y. City, Tel. Lenox 7506.

WEBSTER, DR. A. G., Clark University, Worcester, Mass.

WHITNEY, DR. W. R., General Electric Co., Schenectady, N.Y.;
Res. Tel. Schenectady 2382 J.

WOODWARD, DR. R. S., Carnegie Institution, Washington, D.C.; Res.
65 Dresden Apts., Conn. Ave. & Kalorama Rd. N.W., Washington, D.C.

ARMY AND NAVY OFFICERS IN CONNECTION WITH

SMITH, W. STROTHER, Rear Admiral U.S.Navy, Navy Department,
Washington, D.C.

MERSHON, R. D., Major U.S.R., 80 Madson Lane, N.Y. City, Tel. John
6146; Res. 65 West 54 St., N.Y. City, Tel. Circle 2740.

WHITEHEAD, J. B., Major U.S.R., Johns Hopkins Univ., Baltimore, Md.;
Res. Cold Spring Lane & Linkwood Rd., Guilford, Baltimore, Md.

GRAY, G. F., Captain, Radio Development Section, Signal Corps,
Washington, D.C.

WESTERN REPRESENTATIVE

BABCOCK, A. H., 65 Market St., San Francisco, Cal.

[ATTACHMENT/ENCLOSURE]

Oct. 31, 1918.

PERMANENT COMMITTEES OF THE NAVAL CONSULTING BOARD

AERONAUTICS, INCLUDING AERO MOTORS: Sperry, Chairman; Arnold, Baekeland, Coffin, Riker, Webster.
FOOD AND SANITATION: Sperry, Chairman; Graven, Hunt, Woodward.
CHEMISTRY: Whitney, Chairman; Addicks, Baekeland, Webster, Woodward.
ELECTRICITY: Sprague, Chairman; Addicks, Emmet, Lamme, Webster.
FUEL AND FUEL HANDLING: Miller, Chairman; Addicks, Baekeland, Hunt, Hutchison, Maxim, Robins, Thayer, Webster, Whitney.
INTERNAL COMBUSTION MOTORS: Riker, Chairman; Coffin, Sperry.
LIFE SAVING APPLIANCES: Miller, Chairman; Hutchison, Maxim, Robins.
METALLURGY: Addicks, Lamme, Thayer, Whitney.
MINES AND TORPEDOES: Sperry, Chairman; Baekeland, Hutchison, Maxim.
OPTICAL GLASS: Baekeland, Chairman; Webster, Whitney.
ORDNANCE AND EXPLOSIVES: Maxim, Chairman; Baekeland, Hunt, Hutchison, Sprague, Thayer, Webster, Whitney, Woodward.
PHYSICS: Webster, Chairman; Addicks, Baekeland, Whitney, Woodward.
PRODUCTION, ORGANIZATION, MANUFACTURE AND STANDARDIZATION: Coffin, Chairman; Addicks, Emmet, Lamme, Robins, Saunders, Thayer.
PUBLIC WORKS, YARDS AND DOCKS: Thayer, Chairman; Addicks, Graven, Hunt, Miller.
SHIP CONSTRUCTION: Sprague, Chairman; Hunt, Hutchison, Miller.
SPECIAL PROBLEMS: Lamme, Chairman; Addicks, Hunt, Hutchison, Sperry, Sprague, Webster, Whitney.
STEAM ENGINEERING AND SHIP PROPULSION: Hunt, Chairman; Emmet, Lamme.
SUBMARINES: Emmet, Chairman; Hunt, Hutchison, Saunders, Sprague.
TRANSPORTATION: Riker, Chairman; Coffin, Graven, Miller, Robins, Saunders, Thayer.
WIRELESS AND COMMUNICATIONS: Webster, Chairman; Whitney.

October 25, 1918.

Rear Admiral Geo. E. Bush,
United States Navy Yard,
New York, N.Y.

My dear Admiral:

I have received your favor of October
24th, and am much obliged to you for your courtesy and
prompt attention to the matter of the propellers.

I have something special in mind that I would
like to talk to you about, and can explain it better
in person than I could by letter, so I am going to wait
until you come over to Orange to make me that promised
call. I hope you may be able to find time in the near
future.

Yours sincerely,

8

October 28, 1918.

(Following 'phone in by Mr. W. L. Saunders, this day)

He wanted Mr. Edison to join in this

We are Republicans loyal to the spirit^y of the Republican Party, but in this hour we are willing to subordinate our partisan to the demands of the World's needs. We must not have a divided council. It is for us to show the people of the whole World that we stand by the President in his war aim.

The election of a republican Congress will be construed by our enemies and opposed by our friends as a sign of internal division. We must lay aside our political feelings for the moment. America should uphold the President's needs by giving him a Democratic Congress which will spell to the World United America.

The result of the approaching election will be scanned by the German enemy for anything for which it can disguise into a sign for divided support for the President and America. We deem it an honor in this hour of crisis to vote for our Country.

[ATTACHMENT/ENCLOSURE]

Saunders

The president has made
a bad break in my opinion
and I want to keep
out of the Snarl,

S 10/28/12
I telephoned Mr.
Saunders 10/28/12
M. 10:05 P.M.
H. H. H.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
CHAIRMAN.
BENJAMIN G. THAYER,
VICE CHAIRMAN.
THOMAS ROBINSON,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Oct. 28, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

Owing to the continued prevalence of the Spanish Influenza, the meeting scheduled to be held in Washington this coming Saturday, November 2nd, will be held in New York at the office of the Secretary of the Board on the fifth floor of No. 13 Park Row. As usual the informal meeting will begin at nine o'clock and the formal meeting at ten.

On account of the epidemic, the question of attendance at this meeting is left to the individual discretion of the members of the Board and the officers attached to it.

Yours very truly,

THOMAS ROBINSON

G.J.

TR/gt

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
November 1918**

No.

United States Navy Yard,
NEW YORK, N.Y.

November 1, 1918.

My dear Mr. Edison:

I am sending you the prints of a boat which I should think would serve your needs. She is a 36' motor sailer and as you will see from the print, her propeller shaft is short and can be disconnected at the flange coupling just under the deadwood where you can take hold with your rig.

Her number is 1206. The engine is now in her but it will be a small matter for us to take it out if she will suit you. If you will let me know about this, I will get the Department's permission to take out the engine and turn her over to you.

With kind regards,

Sincerely yours,



Mr. Thomas A. Edison,
c/o Edison Laboratory,
Orange, N.J.

The boat is ok. Disconnect Engine from
Coupling - Then we can put on
worm pinion, worm & Motor



CONFIDENTIAL

Mr. Edison Each Board Member was handed a copy today after
MEMORANDUM RELATIVE TO QUARTZ SUPPLY FOR SUPERSONIC.

Mistig Hatch.

November 1, 1918.

- (1). So far no substitute for crystalline quartz has been discovered. Rochelle Salt Crystals and Tournaline Crystals give the same qualitative results, but Rochelle Salt Crystals are mechanically objectionable and are also objectionable because of their solubility. Tournaline is out of the question because of its rarity.
- (2). Suitable substitutes for quartz could perhaps be developed, but if other groups of men were assigned to the work of developing such substitutes, it would probably cause delay in perfecting a practical apparatus, because of the drain which would be put upon the sources of supply of the necessary apparatus, thus hampering the work that is already in progress.
- (3). There is now on hand a supply of quartz sufficient for the experimental work now in progress, but there is no quartz on hand for turning out practical equipment in quantity. At Columbia University there is at the present time about 1,200 lbs. of Brazilian quartz (run of mine - i.e. unselected). Of this 500 lbs. belong to the National Research Council and 300 lbs. belong to the United States Navy. In addition there is known to be about 6,000 lbs. second grade Brazilian pebble in hands of New York dealers.
- (4). The experiments at New London are most promising. A submarine has been located as far away as 800 to 1,000 yards. This submarine was on the surface, which is considered more difficult than an underwater test. Surface vessels have been located at other varying distances. It is believed by those handling the work that within the next two or three weeks they will locate submarine at a distance of one mile.
- (5). No adequate source of domestic quartz has been as yet developed. The following statement has, in substance, been either telegraphed to mailed to
- Dr. L. D. Ricketts, Arizona.
B. B. Thayer, V.P., Anaconda Mining Co.
J. E. Hayes, Jr., N.P. New Jersey Zinc Co.
Sidney J. Jennings, V.P., U.S.S.R&M Co.
Edgar L. Houghouse, V.P., A.S. & R Co.
W. R. Ingalls, Editor, B. & M. J., New York.
T. A. Richard, Editor, M. & S. Press, San Francisco.
Allan H. Rogers, Consulting Engineer.
Dr. Geo. Otis Smith, Director Geological Survey.
Van H. Manning, Director of Bureau of Mines.
Dr. G. B. Merrill, National Museum, Washington.
Dr. G. P. Kuhn, Tiffany & Co., New York City.
Foot Mineral Co., Philadelphia.
Ward's Natural Science Establishment, Rochester, N. Y.
American Gem & Pearl Co., New York City.
Adolph Kirsch & Co., New York City.
- "Naval Consulting Board desires to obtain prompt information regarding available deposits of crystalline quartz for certain urgent Naval use. Crystals should plainly show location of crystal faces, should be free from internal flaws, cracks or bubbles, should weigh one to six pounds each. Coloring matter in crystals is not necessarily detrimental, but water clear crystals are preferred. Probably fifty tons or more of suitable crystals will be ultimately required. Do you know of any likely deposits and can you have small samples sent me? LAWRENCE ADDICKS."

Replies to date indicate Valveras County, Cal., and Hot Springs, Ark., as most likely places.

(6). The normal supply for optical purposes is imported from Brazil, and samples of domestic pebble tested to date have not shown quality equal to the imported article. It may be necessary to fall back upon Brazilian sources and these are also being investigated.

(7). Brazilian pebble will yield anywhere from 10% to 60% of suitable material. If the crystals be visually selected recovery of suitable material will be greater. As complete specifications as can now be formulated have been obtained from Columbia.

(8). Major Marshon has visited Columbia, New London and several gem dealers, including a member of the War Trade Board, and is thoroughly posted regarding developments to date.

(9). Sir Eric Geddes has stated that methods of detection in service at present are inadequate; has urgently called for a new method; has called attention to the fact that the war is not over until it is over.

(10). Supersonics is fundamentally sound because it does not depend upon factors in control of the enemy. No other promising method is in hand.

(11). The apparatus has great after war possibilities for preventing collisions in fog.

(12). Quartz has a market value for resale.

(13). The exact amount of quartz required for installations to be made and the not good crystal obtainable from all local stocks cannot be stated to-day but will shortly be known. Quartz brings anywhere from 25¢ to \$2.50 a pound, say \$1.00 average.

(14). The following motion is proposed:

The Naval Consulting Board hereby appropriate ten thousand dollars to be expended at the discretion of the Chairman or his delegate for the procurement of such quartz as may prove necessary in his or his delegate's judgement to make possible a prompt application in service of the apparatus which Prof. Pupin is developing for the Special Board of the Navy."

November 2, 1918.

Rear Admiral Geo. E. Burd,
United States Navy Yard,
New York, N.Y.

My dear Admiral:

Let me thank you for your letter
of November 1st, and the blue print of the boat
therein enclosed.

This boat is all right for my purpose.
and I would ask that you disconnect the engine from
the coupling. Then we can put on the worm pinion,
the worm and the motor.

Shall I keep the blue print or return it?

With kind regards, I remain,

Yours sincerely,

/5907.

November 5, 1918.

Ford Motor Company,

Long Island City, N.Y.

Dear Mr. Plaintiff: Attn: Mr. Plaintiff:

We have received from your Company the enclosed bill for one Chassis, which was sent to Mr. Edison by order of Mr. Ford last June. It was originally intended by Mr. Ford that there should be no charge to Mr. Edison for this, as he was going to make some experiments with it in connection with war work.

Mr. Edison wants me to say that inasmuch as Mr. Ford went into the manufacture of small tanks, he, Mr. Edison, would not commence any experiments on this line. He, therefore, wants to return the Chassis to your Company. No work has ever been done on it, and it is in exactly the same condition as when we received it.

Mr. Edison would like to return the Chassis, but we are very short of men and have no one at present by whom we could send it. Can you send one of your men over to drive this Chassis back to your Long Island City plant? If so, I shall be obliged if you will kindly call me up on the 'phone and say when we can expect your man. You had better give him a letter authorizing him to receive it, so that we will know we are delivering it to the right party.

When the Chassis is returned to your Works, I presume the enclosed bill will be cancelled, except the items of gas and oil.

With kind regards, I remain,

Yours very truly,

Assistant to Mr. Edison.

Form 1204

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telex | |
| Day Letter | Blue |
| Night Message | None |
| Night Letter | N.L. |

If more than one class of service appears after the check (number of which) then the first letter of each Western Union symbol indicated by the symbol appearing after the check.

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Telex | |
| Day Letter | Blue |
| Night Message | None |
| Night Letter | N.L. |

If more than one class of service appears after the check (number of which) then the first letter of each Western Union symbol indicated by the symbol appearing after the check.

RECEIVED AT ORANGE, N. J.
195NYGC 25 GOING TO PHONE ORANGE 4361

WA WASHINGTON DC NOV 6 1918 934PM
TELEPHONE NO. 257

THOMAS A EDISON

ORANGE NJ

257
Hans Carlson
9:10 PM
BY AIR AT

HAVE TODAY AUTHORIZED ADMIRAL BURD TO LOAN YOU BOAT AS REQUESTED
AND AID YOU IN EVERY WAY POSSIBLE

JOSEPHUS DANIELS

906PM

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

26840
WSS MZ

NAVY DEPARTMENT
WASHINGTON

November 6, 1918.

My dear Mr. Meadowcroft:

I am enclosing you a copy of a letter signed by the Secretary to Mr. Edison in regard to his experiments on torpedo listening device and kite rudder.

The Secretary has been extremely busy the last two or three weeks and I laid before him all the data necessary for his information, and prepared the letter this morning, which has been approved and signed by him.

You will note in the letter that orders will be given to the Bureau of Construction and Repair for the necessary instructions to be given to the New York Navy Yard for the manufacture of the sea anchors.

I have no doubt that you have full specifications and instructions ready for the New York Yard as the submarine will have to make many changes in her torpedo tubes and I would like to know about how long it will take Mr. Edison to make his preparations.

In Mr. Edison's letter to me he stated that practically all he needed was authorization. I have endeavored to find a merchant ship upon which he could install his listening device but could not find one as the Navy Department does not control coasting vessels.

The Narada is a large sea-going yacht and she could be sent to Hoboken at almost any time. Mr. Edison desires and when the experiment is ready I will come up and go over all the preliminaries and see that no hitch is encountered and that the experiments will show all that is desired and full data taken.

I have had considerable experience in arranging for trials and have found that unless a very careful pre-arrangement is made there is always some loose link that invalidates the whole work done.

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT
WASHINGTON

I am directed by the Secretary to keep in personal touch with this trial and will you please use long distance telephone, telegraph and letters so that I am kept in close touch with it.

Hoping this will be entirely satisfactory to Mr. Edison I am with kindest regards,

Sincerely yours,

Wm H. Meadocroft

Mr. William H. Meadowcroft,
The Edison Laboratory,
Orange, New Jersey.

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

NAVY DEPARTMENT
WASHINGTON

WSS:MW

November 6, 1918.

My dear Mr. Edison:

I hope you will pardon my seeming neglect for the past two weeks, but as you know I have been extremely busy and away from Washington part of the time.

On my return I have taken up all the prepared data on your idea of avoiding torpedo attack by the use of sea anchors and a listening device for torpedoes. I find that it is extremely difficult to obtain the services of a cargo boat, but if you can do so and will let me know what steps it is necessary for me to take, I will give it my personal attention, and you have my full authorization to proceed with the manufacture of such sea anchors as you may need and when you are ready, I will direct a submarine to proceed to sea for the purpose of firing torpedoes.

The modern submarine is not fitted for firing the Whitehead torpedo, but with slight changes can be made to accommodate this weapon. The services of the Marada, a large sea-going yacht can be obtained much quicker than a cargo boat and she could be sent much nearer your laboratory for the purpose of fitting the listening device than a vessel engaged in traffic along the coast.

I presume you will make a listening device in your laboratory and desire the sea anchors and necessary rope to be furnished from the New York Navy Yard. I have directed the Bureau of Construction and Repair to issue the necessary orders for this. Will you please let me know what I can do further in this matter.

Sincerely yours,
James A. Daniel

Thos. A. Edison, Esq.,
West Orange, N. J.

November 7, 1918.

Rear Admiral G. E. Burd,
New York Navy Yard,
New York, N.Y.

My dear Admiral:

This will introduce to you Mr.
Henry G. Wolfe, whom Mr. Edison is sending over
to see you about the small boat as to which you
telephoned this morning. Mr. Wolfe will explain
Mr. Edison's wishes.

Yours very truly,

Assistant to Mr. Edison.

A/5926.

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
CHIEF OF STAFF.
BENJAMIN B. THAYER,
Vice President and Chairman.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Nov. 7, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The next meeting of the Naval Consulting Board will be held on Saturday, November 16, 1918, at the Board's offices in the Navy Department, Washington, D.C.

As usual, the informal meeting will begin at nine o'clock and the formal meeting at ten.

Very truly yours,

THOMAS ROBINS

GT

See attached

Find out from
Bless Co. if they
can shoot their old
style Whitehead
torpedoes from their
boat

Scanned
4/9/64

Find out from Necopont
Torpedo station if
the Whitehead Torpedoes
they have in stock can be
launched from any

if the arrangements
as now arranged
for 15 Class Torpedoes
or for much
Change necessary

S /

[ATTACHMENT/ENCLOSURE]

2

Nov. 8, 1918

Mr. Edison:

I telephoned to the Commandant's office, Newport Torpedo Station, and asked if the Whitehead Torpedoes they have in stock can be launched from ~~or~~ any of their submarines. The Officer who replied said they could be launched from the submarines they have up here, without charge - and that Bliss torpedoes could also be launched from the same submarines without charge. I asked him twice, to make

sure, and he gave the same answer each time.

He said the Whitehead torpedoes are 45 centimeters outside diameter - and 5.2 meters long.

(Enclosed)

[ATTACHMENT/ENCLOSURE]

Nov. 9, 1918

Mr. Edison:

I called up the Bliss
Co. in Brooklyn, to ask if
they could launch their old
style Whitehead Torpedoes from
their boat at Bay Harbor.

Their Mr. Skinner said
he thought they could fire
the Marks V style, but could
not say definitely. He said
we would have to write to
Commandant F. L. Sawyer
Naval Inspector of Ordnance, at
the Bliss Works 53rd St and First
Ave, Brooklyn. Meadowcroft

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE CHAIRMAN.
BENJAMIN D. THAYER,
VICE CHAIRMAN.
THOMAS ROBINSON,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Nov. 11, 1918.

The Chairman requests me to issue the following
notice:-

TO THE CHAIRMEN OF ALL GENERAL AND SPECIAL COMMITTEES
OF THE NAVAL CONSULTING BOARD:

Dear Sirs:

In view of the ending of the War, the question
of further expenditure in the work you may be doing
should come up and be decided at the meeting at
Washington next Saturday, November 16th. In the
meantime please use your judgment as to the wisdom
of continuing expenditure.

W. L. Saunders

It is hoped that every member of the Board will
be present at Saturday's meeting.

Yours very truly,

Thomas Robins,
Secretary.

TR/gt

November 14, 1918.

PERSONAL AND CONFIDENTIAL:

Hon. Josephus Daniels,
The Secretary of the Navy,
Washington, D. C.

My dear Mr. Daniels:

This is in reply to your letter of the 6th instant, saying that it is extremely difficult to get a cargo boat with which to try the torpedó experiment; also that considerable changes will have to be made in the torpedó tube to fire a Whitehead torpedó.

Let me say that this is another characteristic example of the misinformation furnished you by Department chiefs. I was informed and found out myself at Newport that any submarine they had there can fire a Whitehead torpedó without any change.

To make sure, I got Newport on the telephone after receiving your letter, and had this corroborated. They positively asserted that no change would be necessary. It would be strange if it were not so, as the Government has a large stock of Whitehead torpedos in addition to the Bliss type, I am told.

Regarding obtaining a cargo boat, I have already stated that I could use any coastwise cargo boat without delaying the boat. Let me say in addition, that in the yards around New York and vicinity, there is turned out every day a cargo boat. All these boats have to have their trials trips, and I could go on one of them to carry out my experiments. I have now waited eight months to get trials of sea anchors, etc., and I am afraid if Smith is to have charge it will be six months more.

If you will authorize the Brooklyn Navy Yard to make the sea anchors and small mast for holding the listener on the bow of the boat, I will go ahead as I think I can get a cargo boat myself from the manufacturers before they are turned over to the Government.

As the War is over, this device will be unnecessary to save cargo boats, but I think it will be of great value for sailing in fogs and preventing collisions. If you want me to go ahead, I will ask Admiral Burd to make the small mast. He will probably refer it to you, and if you will feel like authorizing it and you have authorized the anchors, I will go ahead and put it on a cargo boat.

Yours sincerely,

A/6949.

[ATTACHMENT/ENCLOSURE]

Joseph Daniels -
Personal - Yours of the 6th
saying that it is extremely
difficult to get a cargo boat
to try the experiment with
torpedoes also that
considerable changes
will have to be made
in the torpedo tubes to
fire a Whithead torpedo
Let me say that this is
another ^{characteristic} example of the
~~despatch that is forwarded~~
^{of the information furnished you}
~~you~~. It does inform
you and myself at Necopay
that any submarine without

any change whatever
can fire a Whithead
torpedo To make sure
I got Necopay on phone
after receiving your
letter & had this corroborated
they positively assert
that no change is necessary
It would be strange
if it were not so as
Government has a
big stock of Whitheads
^{we add more than 10000}
Regarding getting cargo
boats, I have already

[ATTACHMENT/ENCLOSURE]

3

stated that I could
use any Coast wise
Cargo boat without
any delaying of
the boat, let me say
in addition that there
is a Cargo boat turned
out every day in yards
around N.Y. Vacant
that has to have trial
trips which I could
go on - I have now

4

wanted 8 months
~~to get trials of~~
anchors etc & if
Smith is to have charge
it will be 6 months
more,

If you will authorize
Bklyn Navy Yard to
make the sea anchors
and small mast for
holding listeners by
bow, I will go ahead
as I can get a Cargo
boat^{imported} from Manufacturers

[ATTACHMENT/ENCLOSURE]

5

before they are turned
over to the Government.
While at present there is of
little value to the device
for saving cargo boats
it will I think be of
great value for sailing in
fogs & preventing collisions.
If you want me to go ahead
Please ask Capt Bowditch to
make the small vessel, & he
will offer it to you & if you
feel like authorizing it
as you have the calculations
I will go ahead & put it
on a cargo boat.

W.H.C.

H

Captain Harris:

We have made arrangements to use the Dock of Tomkins Bros., their business is Mason's materials. Captain Harris is to tow this motor boat from the Navy Yard to Tomkins Bros. Dock in Newark. The Number of the Boat is 1206. Tomkins Bros. Dock in Newark is next to the Standard Oil Company's Dock, which is opposite the Linoleum Dock which is near the Erie R.R. Bridge.

Mr. Edison has the permission of Tomkins Bros. to dock that motor boat, which we understand is at the Navy Yard. Get in touch with Admiral Burd or his Assistant Lieut. Dempsey.

2 4 2 5 1 5 x = Tomkins Bros.

Mrs. Erzberger

Phone'd Capt. Harris 10:20 A.M. 1/14/18

Capt. Harris said his launch
house to take boat if he wanted
would not do it. Mr. E. said
let boat remain at Navy
Yard now 1/18 W.W.

DRIVER-HARRIS COMPANY

CABLE ADDRESS: DRIVER NEWARK

10

ELECTRICAL RESISTANCE WIRES
SPECIAL ALLOYS
AND PURE METALS
FOR ELECTRICAL-MECHANICAL AND CHEMICAL USES
IN THE FORM OF
WIRE-SHEET-STRIP-STRAND-CASTINGS



NICHROME CASTINGS
COLD ROLLED STRIP STEEL
WIRE ROPE
FLEXIBLE HEATER CORD
BRASS-BRONZE-MONEL METAL WIRES
PURE SHEET NICKEL

REFER TO

Sales Dept.

HARRISON, N. J.

November 14, 1918.

Thomas A. Edison Laboratories,
Orange, N. J.

Gentlemen:-

Attn. Mr. Wm. H. Meadowcroft.

With reference to your letter dated October 23rd and your order #553370, specifying Hard Nichrome Wire and Hard Nichrome Wire Cloth, would advise that we could furnish you with hard Nichrome Wire, but could not furnish you with hard Nichrome Wire Cloth, material which we furnish being the ordinary run of stock, running about the same hardness as the sample which we are enclosing.

Will you kindly let us have your authority to furnish our regular Nichrome Stock on your order.

Yours very truly,
DRIVER-HARRIS COMPANY.

W. H. M.
Sales Department.

LVP:LDG

5991

[ATTACHMENT/ENCLOSURE]

Mr Edison Harrison 3900

Pete Clegg Hatt is in

The most of our important Utilities
Opposite us export and need's certain
wire & wire screen made of
high temperature # 30-36 wire
as per list attached.

The Firm Harris wire Co
make it but the door & window
frame will enough to be able to
get to from them. They are up the
Capacity on Standard wire.

He asked me if I could try
larger at for him and I think
if you could order it they
would furnish it for

Hatt

20 to 100 feet
of #30 or any size to #36
13 & 5 (inclusive)

Hard, High Temperature
wire

1 sq foot or less of

1/8" mesh and 1/16" mesh
Wire gauge, #30 to #36 wire of
High Temperature, hard wire
for Resistance purposes

WESTERN UNION

TELEGRAM **DAY LETTER**

GEORGE W. E. ATKINS, VICE-PRESIDENT NEWCOMB CARLTON, PRESIDENT BELVIDERE BROOKS, VICE-PRESIDENT

| | | |
|----------------|------------|-------|
| RECEIVER'S No. | TIME FILED | CHECK |
|----------------|------------|-------|

SEND the following Day Letter, subject to the terms
on back hereof, which are hereby agreed to November 18, 1918. 191

To Thos. A. Edison,

Orange, N. J.

I have telegraphed Admiral Burd

to furnish you what you desire with reference to the
experiment.

JOSEPHUS DANIELS.

November 15, 1918.

Dr. Peter Cooper Hewitt,
18 East 33d Street,
Dear Dr. Hewitt: New York, N.Y.

I telephoned and wrote to the Driver
Harris people ordering the wire that you wanted and also
the wire cloth, and have just received the enclosed
letter and sample from them. Will you please let
me know what to say.

Yours very truly,

Assistant to Mr. Edison.

Enclosures - 2:

A/5954

November 16, 1918.

Rear Admiral Roger Welles,
Director,
Office of Naval Intelligence,
Washington, D. C.

Dear Sir:-

In June, 1917, your office assigned Mr. Charles B. Hanford, Chief Yeoman, U.S.N.R.F., as a Personal Guard to me during the period of the war.

In view of recent developments and the present status, I presume you will desire to recall him.

Allow me to express my sincere appreciation of the courtesy extended by your office in placing at my disposal the services of Mr. Hanford and the protection afforded by his continuous presence with me for so long a time.

Let me say also, as concerning Mr. Hanford, that I have come to entertain a high regard for him. He is a man of pleasing personality, tactful and possessed of good common sense. He has displayed a very intelligent comprehension of certain matters that have arisen in connection with my work for the Navy Department, and I have been able to use him frequently to the advantage of the Government. I venture to express the hope that on his recall he may be given an opportunity to show his worth to the Country.

Yours very truly,

A.

PETER COOPER HEWITT
16 EAST 33D STREET
NEW YORK, N.Y.

TELEPHONE
VANDERBILT 828

November 16th, 1916.

Mr. Wm. H. Meadowcroft,
Laboratory of Thomas A. Edison,
Orange, N. J.

Dear Mr. Meadowcroft:-

I wish to thank you for helping me get some wire.
The wire suggested by the Driver-Harris Company will pro-
bably suit my purpose better than the gauge. I would
like to have it. I would like the wire .005" in diam-
eter, or as near that size as I can get it. It is for
an experiment and one-half pound will be satisfactory,
although I could do with less.

Kindly give my regards to Mr. Edison. I enclose
Test No. 85 and also memoranda concerning it, as I prom-
ised to send it to him. ~~also Helicoptr report~~.

Very truly yours,

Peter Cooper Hewitt

5979

[ATTACHMENT/ENCLOSURE]

Noted my file

Hewitt

| R.P.M. | Lift, lbs. | Horse power | Lbs. Lift per H.P. | ft. per sec. at 20 ft. radius |
|--------|---------------|----------------|-----------------------|-------------------------------------|
| 46.5 | 1300 | 44.4 | 29.3 | 97.5 |
| 56.5 | 1800 | 75.4 | 23.9 | 118.3 |
| 65. | 2150 | 98.4 | 21.8 | 132. |
| 70. | 2550 | 126.5 | 20.2 | 146.5 |

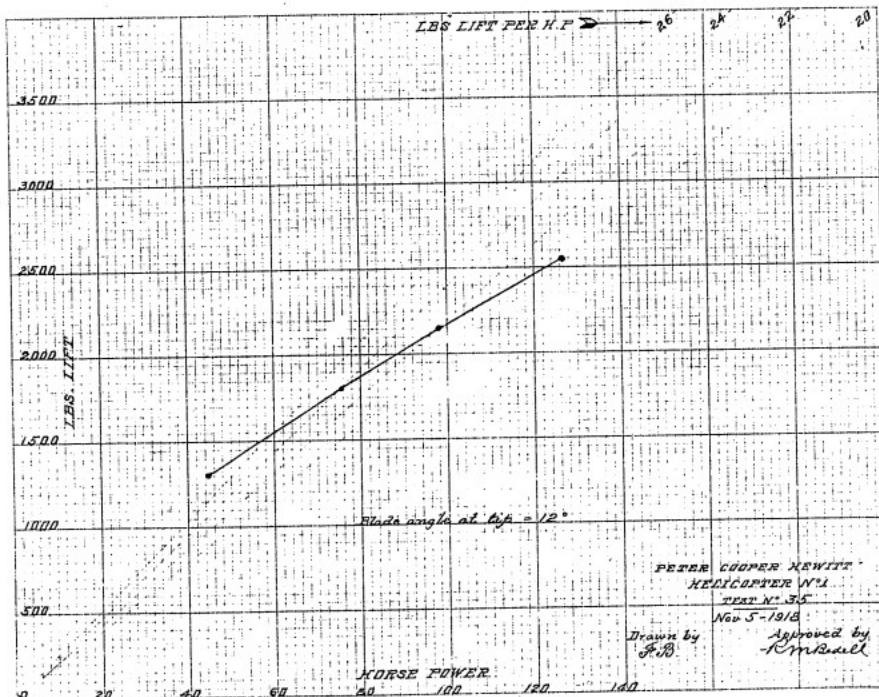
Blade set at 12° angle. (Circum)
 15° " inner end } 3° difference
edge change
Veloc. line

(from motion picture)

Span of propellor - 51 ft.
Blades 11 ft. 7" by 2 ft. 6"

See page 7

[ATTACHMENT/ENCLOSURE]



[ATTACHMENT/ENCLOSURE]

PRIVATE.

Statement sent to Major William J. Hammer, U. S. A.,
Representing Inventions Section, War Plans Division,
General Staff, Army War College, who witnessed
Helicopter test November 1st, 1916.

[ATTACHMENT/ENCLOSURE]

Confidential
To Thomas A. Edison COPY
Nov. 18/10
HELICOPTER
November 8th, 1918.

The fundamental object of the helicopter is to obtain a lift more than equal to the entire weight of the machine. That is, to obtain an upward pull by means of dynamic action of propellers greater than the total weight of the machine including motors, fuel and load so that the machine will be forced upward and lifted into the air.

The helicopter that I have designed, hereafter called Helicopter No. 1, has propellers of large diameter adapted to act upon a large mass of air, and the blades are designed to approximate the action of aeroplane wings to obtain the advantage of their lift.

In earlier considerations of this problem it was thought possible to accomplish ascension by the simple reaction resulting from the downward acceleration of the mass of air acted upon by the propeller.

The laws relating to reaction due to acceleration of a fluid (air) are perfectly understood and exact calculation can be made for obtaining the required lift for any specific weight of machine. The conditions being that the dynamic reaction in pounds obtained per horse-power multiplied by the available horse-power must exceed the total weight of the machine and motor in order that the machine may rise from the ground.

The laws of momentum and consideration of resulting dis-

[ATTACHMENT/ENCLOSURE]

tribution of energy due to ~~the creation of~~ **COPY** the propeller must be taken into account. This requires a careful determination of the size of the propeller used, and it must be so chosen that the weight of air acted upon per second and the velocity imparted to the air will give the desired thrust or pull, lift per horse-power being proportional to the size.

It appears that up to the present it has been considered very important to have a very light machine and very light motors. This is not necessary as the lift obtainable with a motor, that is the lift per horse-power, is proportional to the quantity of air handled or proportional to the size of the propeller used. Heretofore the propellers used appear to me to have been too small in diameter for the horse-power designed for their operation. Recent dynamic research has brought forward new and most important discoveries whereby great advantages have been obtained by the form of lifting surfaces used. The investigation of supporting surfaces for aeroplanes has developed planes where the lift obtained from the upper and lower surfaces of the plane are not the same, that obtained from the upper surface being much greater than that obtained from the lower surface. The resulting total lift is much greater per horse-power than was formerly considered as possible by simple dynamic action.

In order to avail of the advantages of these discoveries and apply them in a helicopter it is necessary to know how the conditions of lift are affected when a plane is rotated as the blade of a propeller and when the plane is acting as a propeller blade to obtain results as advantageous as those obtained

[ATTACHMENT/ENCLOSURE]

COPY

by an aeroplane wing. It is also very important to know how these results are modified and influenced by the diameter of the propeller, the size of the propeller blade, the speed of revolution of the propeller and the relation of the size of the propeller to the horse-power with which it is driven.

Helicopter No. 1, is designed so that it might be operated to furnish practical data relative to these various problems and enable their solution, and particularly for obtaining data relative to the relation of diameter to lift per horse-power for the horse-power used. It is designed to be operated with 20 horse-power at 100 revolutions and sustain a lift of 4000 pounds and withstand the unequal strains due to buffeting of the air. It is built entirely of steel except the ribs of the propeller blades and the blade covering which are of sheet aluminum. The design, size, material of construction and strength are such as to serve as a guide for estimating the necessary weight of the whole and the various parts in future designs and suggest desirable modification of design.

The experimental data furnished by tests of Helicopter No. 1 show that the aeroplane wing lifts are obtained, and that the lift per horse-power for a given diameter is in excess of that formerly thought possible to be obtained by simple dynamic reaction.

Although for various reasons it has as yet only been operated with about six-tenths of the horse-power for which it was designed it has given a lift more than its own weight and the weight of standard motors of this horse-power and a surplus

[ATTACHMENT/ENCLOSURE]

COPY

of more than the weight of a man and fuel (see compilation
of tests).

Helicopter No. 1 consists of two propellers, one above the other, each 51 feet in diameter, one being right hand, the other left, rotating in opposite directions in operation. The power transmission shafts are concentric and driven by two motors whereby the torque is transmitted without load on the bearings or working stress transmitted through the frame.

In operation there is but little if any tendency of the motive power support to rotate, balance of the propeller torque being more easily obtained than was expected.

The propellers are designed so that the centre of support of the blade is forward of the centre of lift in order to promote smooth action and avoid chattering (the practical working is perfect). This gives a small torsional moment to the tube which acts as the compression member or arm of the propeller which is held at the hub. This tube runs through the blades to which they are fastened. The operation of the propellers is most satisfactory.

The shape of the propeller blade is that of Eiffel wing No. 63. This wing was selected because of the exhaustive treatment of it in "Nouvelles Recherches sur la Resistance de L'Air et L'Aviation, Faitees au Laboratoire D'Auteuil", which was thought might prove useful in case of eccentricities being observed during the tests and would enable modification to be intelligently made. Wing No. 63 has only 76% the efficiency of wing No. 32 which I hope to substitute for it and obtain

[ATTACHMENT/ENCLOSURE]

25% advantage in lift. **COPY**

In a test, the blade being set at an angle of 12° at the circumference, gave in operation at various speeds a lift fairly accurately corresponding to the lift such a blade should give if acting as the wing of an aeroplane, set at about 6° , demonstrating the faithfulness of the action of the blade and also giving very valuable data for consideration respecting its action in this connection and suggesting the great importance of further investigation. This apparent angular loss of power will become, in my opinion, useful power for movement when the machine is not stationary, and during the tests a side wind caused the machine to develop great additional lift.

Helicopter No. 1 weighs about 1500 pounds and has an excess weight of more than 300 pounds which is capable of being removed. This excess weight is due to not being able to obtain standard tubing of suitable size at the time of construction. Standard Hesse-Bright ball bearings are used throughout and are entirely out of proportion to the work required of them. Suitable gear wheels were not obtainable, so a make-shift set was installed to save time. Suitable gears would have been easily obtained in ordinary times.

The machine set up for testing is mounted on a platform together with its motors which stand on a scales, the platform resting on a small ball thrust bearing which is between it and the scales so that the machine is free to rotate. This enables measuring any inequality of torque of the propellers and any tendency of the motors to rotate. The balance is so perfect

[ATTACHMENT/ENCLOSURE]

COPY

that the whole may be turned with one finger.

The total weight of machine and motors before starting the test is taken, being about 9000 pounds, which is read on a dial of the scales graduated to 10 pounds and can be read accurately to 5 pounds. During the test the original weight is reduced by the amount of the lift obtained which the scales continually registers and is shown by the dial. As more power is used and the lift becomes greater, the scales register less weight. The machine during the tests is operated by calibrated electric motors for accurately obtaining momentary power reading.

I enclose tests, 21 - (25-19) - (26-24) - 28 - 31 - 33 - 35, which explain themselves, a number of small photographs of the machine as operated, and curve sheets indicative of the relations of diameter of propeller and lift per horse-power for various horse-powers employed.

Note:- I believe I have already given you copies of the curve sheets above referred to, therefore they are omitted.

[ATTACHMENT/ENCLOSURE]

COPY

Approximate Summary of Helicopter No. 1,
Operated With Gasoline Motors.

| | |
|--|----------------|
| Weight of Helicopter No. 1 | 1,500 pounds |
| Two Gnome motors, weight 46 kilos each | 423 " |
| Addition to frame | <u>100</u> " |
| Total weight | 2,023 " |
| Lift (Test No. 35) with 126 horse-power..... | <u>2,550</u> " |
| Excess lift (for fuel tank and man)..... | 477 " |
| Being excess lift per horse-power..... | 3.77" |

| | |
|--|---------------------------|
| Removing 300 pounds excess weight from machine. weight | 1,200 pounds |
| Substituting wing No. 32 for wing No. 63. | |
| No. 63 being only 75% efficiency of wing No. 32, modified machine lift | 3,090 pounds |
| Machine weight | 1,200 |
| Motors | 423 |
| Addition to frame | <u>100</u> <u>1,723</u> " |
| Excess lift | 1,367 " |
| Lift per horse-power in excess of weight... | 10.8 " |

Much better results will be obtained with the use of
more horse-power.

[ATTACHMENT/ENCLOSURE]

COPY

The peripheral speed of the propeller blades (at 2,500 pounds lift and r.p.m. 70) is 187 feet per second or 11,220 per minute, and the mean average blade speed (at 20 feet radius) 146.5 feet per second or 8,800 feet per minute, which should give a possible horizontal movement of about 4,400 feet per minute or, say, 40 to 50 miles per hour. By using smaller blades or smaller blade angle, higher peripheral speeds may be used and higher lateral speed obtained.

Substituting wing No. 32 for wing No. 68, greater peripheral speeds can be used which, under substantially the same conditions, will give greater speed of lateral flight.

There is no doubt, from the tests of Helicopter No. 1, that the helicopter provides a very valuable and useful means of navigating the air. It possesses advantages over the aeroplane, a summary of which, made by Professor Crocker, I enclose.

I have demonstrated technically the success of the helicopter by private enterprise to a point where its further development requires the support of the Government.

Most respectfully,

RA-11/16

No. 166-78

United States Navy Yard,
NEW YORK, N. Y.

NOV 13 1918

From: Industrial Manager
To: Thos. A. Edison, Esq.,
Orange, N.J.

Referred to the Capt.
he can furnish a
sample of material.

Subject: Manufacture of Sea Anchors. (H.D.#12525-18, 11/22-GWS).

Reference : (a) Bu. G&R let. of 11/13/18, #16500 (NY).

1. Authority has been received from the Navy Dept. to supply the necessary material and labor to manufacture certain sea anchors for your use.

2. Please furnish the necessary sketches, or detailed instructions for the preparation of this material.

G.E. BURD.

I asked Capt. Harris to
take sample over to
Admiral Board on 11/18/18
W.H.U.

PETER COOPER HEWITT
10 EAST 33rd STREET
NEW YORK, N.Y.

TELEPHONE
VANDERBILT 625

November 20th, 1918.

Mr. M. H. Meadowcroft,
Laboratory of Thomas A. Edison,
Orange, N. J.
Dear Mr. Meadowcroft:-

I have received your letter of November 19th and
I return herewith the Draper-Morris letter.

We had a very successful test of the helicopter
yesterday but it was just as well that Mr. Edison was
not there as it was very cold and windy under the machine.

Very truly yours,



P. S. If I could get a sample (a square foot, say) of
their wire gauze as well as the wire, I would like it
very much.

U. S. S. "SACHEL" S. P. 192
Navy Yard, New York, N.Y.
Nov. 21st 1918.

From: Lieut. W. S. Harris, U.S.N.R.
To: Mr. Thos. A. Edison.

Subject: Recommendation for promotion.

My dear Mr. Edison:

1. Recently there have been a good many promotions, in the line, of several young Officers, of my organization, who have received their promotion through recommendation of their Commanding Officers. I ascertain, in order to receive, my promotion to Lieutenant-Commander, I would have to have recommendation from my Commanding Officer, for the past six months.

2. I have been under no direct orders of any Naval Organization since being ordered to command under your orders, and I would sincerely appreciate it, if in your opinion you see fit, your recommendation for promotion to Lieutenant-Commander, U. S. N. R. F.

Wm. S. Harris

USS Sachem. S.P.192.
New York.N.Y.
November, 23rd. 1918.

By Dear Mr. Meadowcroft:-
In accordance with our telephone conversation today relative my recommendation from Mr. Edison for my promotion to Lieut. Commander USNR. I submit the following draft, and you add what ever Mr. Edison thinks he cares to say about my ability etc. I assure you this is the hardest job I ever tackled, but anyway here goes.

From: ~~Mr~~ Thomas A. Edison.
To : The Secretary of The Navy. Navy Department. Washington, D.C.
Subject: Warren Stone Harris. Lieutenant USNRF, promotion, recommendation of.

1. In view of my observations of the above named Officer, who has been operating under my orders since January, 1918, I hereby recommend him for promotion to Lieut. Commander (L.C.M.F.)
2. I further recommend to state that ~~XXXX~~ Lieut. Morris has ~~XXXX~~, diligently performed all duties required to assist in my work experiments, and carrying out experiments with sea anchors, and collision mats, and have found him willing and ready at all times to expedite matters in accordance with my orders.

2. (Here insert .

Mr. Edison
Cares }
To Day.

Signed Thomas Edison.

I sincerely hope that Mr. Edison won't think I am stuck on myself,
and thanking you in advance for this most gracious favor. I am
Gratefully,

3. In the course of my experimental work with
which Lieut. Harris has been associated I have found him
highly intelligent, energetic and resourceful, and I am
glad to have an opportunity of making a recommendation
in his behalf.

Form 1004

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Teletype | |
| Day Letter | Blue |
| Night Message | Red |
| Priority | Green |
| | |

If none of these three symbols appear after the check (number of service) it is a telegram. Otherwise, it is a letter. If a symbol appears after the check, its character is indicated by the symbol appearing after its check.

WESTERN UNION

TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

RECEIVED AT

CON. MILIT. ST. CLOUDS, MD closed

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Teletype | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | Green |
| | |

If none of these three symbols appear after the check (number of service) it is a telegram. Otherwise, it is a letter. If a symbol appears after the check, its character is indicated by the symbol appearing after its check.

128 NY R 28 GOVT

ABERDEEN PROVING GROUNDS ABERDEEN MD 1155AM NOV 23

EDISON LABORATORY

WESTORANGE NJ

ONE FIVE FIVE MILLIMETER HOWITZER MODEL ONE NINE ONE EIGHT HAS
 FOUR EIGHT GROOVES IN RIFLING

PHELLIPS SEVEN NINE NAUGHT FIVE ABERDEEN
 1250PM PROVING GROUND

TELEPHONE NO.
 TELEPHONE TO *Wadsworth*
 BY *by* AT *124P*:
 DISPOSITION

November 25, 1918.

From: Thomas A. Edison, Orange, N.J.
To: The Secretary of the Navy, Washington, D.C.
Subject: Warren Stone Harris, Lieutenant USNRF, promotion,
recommendation of.

1. In view of my observations of the above-named Officer, who has been operating under my orders since January, 1918, I hereby recommend him for promotion to Lieut. Commander, USNRF.
2. I further desire to state that Lieut Harris has diligently performed all duties required to assist in my work in carrying out my experiments with listening devices, son anchors, and collision mats, and I have found him willing and ready at all times to expedite matters in accordance with my orders.
3. In the course of that part of my experimental work with which Lieut. Harris has been associated, I have found him highly intelligent, energetic and resourceful, and I am glad to have an opportunity of making a recommendation in his behalf.

Respectfully,

(signed) Thos. A. Edison.

In Reply, Please Refer
To No.

XX

NAVY DEPARTMENT
(BUREAU OF SUPPLIES AND ACCOUNTS)

WASHINGTON, D. C.

27 November 1918.

me/s

Mr. Thomas A. Edison,
Ft. Myers, Fla.

My dear Mr. Edison:

I am enclosing herewith advance copy of the
text of my annual report for 1918 which is due for
release 14 December 1918.

While it is somewhat lengthy, I hope that at
some convenient time you may look it over as I believe
it contains a great deal of information of interest
and value. At any rate, it is the record for one war
year of the work done by the Supply Corps of the NAVY
and the headquarters staff of the Bureau of Supplies
and Accounts of which I have the great good fortune to
be the head.

With kindest regards, I am

Faithfully yours

John L. Nonnay

Nov 79/18

Capt Harris

I got complaints from the boys
that you lack interest & they get
no real cooperation from you

Why is it you have to return for
Coal when you had previously
Coaled a short time & hasn't
made small village since,

Edna

He says the complaint is without
foundation, and will come over and
see you tomorrow morning. Wants to
talk to you in private room Meadowcroft

N.H.L.1

In reply refer to No.

NAVY DEPARTMENT
OFFICE OF NAVAL INTELLIGENCE
WASHINGTON

November 29, 1916.

Mr. Thomas A. Edison,
Orange, New Jersey.

Dear Sir:-

As our Branch Office in New York is closing, as of December 1st, I take pleasure in expressing my thanks, and that of the Office of Naval Intelligence, to you for your valuable help and co-operation as a Voluntary Aide to the New York Branch, the success of which, I realize, has been greatly enhanced by your action in placing at its disposal your time and experience.

Again thanking you for your patriotic and unselfish assistance.

Yours very truly,
Roger Welles

Rear-Admiral, U.S.N.,
Director of Naval Intelligence.

Whew!
This must be a
stock letter as
never let me
think such

**Naval Consulting Board
and Related Wartime Research Papers
Correspondence
December 1918**

December 2, 1918.

Friend McGowan:

Your Annual Report was received and read with much interest.

In my opportunity of observation of the Navy, you are the only man who has made good, or that took the slightest pride in improving the Navy, or had any snap. I suppose this opinion is unjust, but all my life I have been on the jump, doing many things quick and with great enthusiasm, as you have been doing since the war. So I have no patience with the dead personalities I have met in the Navy. They all appeared to resent the war as a disturbance of their life routine, and appeared and acted as if they didn't have any pride in the Navy, or without the push to accomplish things that would add to the Navy's reputation.

They turned down every project and went out of their way to do so. No one would do a thing to help, except Daniels and he is powerless to get anything done if the Department heads disagree.

I must say the Navy boys are fine fellows and one cannot help liking them, but why they act the way they do is a mystery to me.

I hope you are in good health and will get full public recognition for what you have done.

Sincerely yours,

Rear Admiral Samuel McGowan,
Paymaster General, U.S.Navy,
Washington, D.C.

[ATTACHMENT/ENCLOSURE]

friend

W. Gowan

Your email was read with much interest.
I have had no opportunity of observing the
officer you are the only man
who has made good or that took
the slightest pride in supervising the Navy
or had any snap - I suppose
this opinion is unjust, but all
my life I have been on the
jumps, doing many things quick
& with great enthusiasm, and
you have learned during since
the war, ~~that~~ ^{so} I have no
patience with the dead
personalities I have met
in the Navy. They all
appeared to resent the way

[ATTACHMENT/ENCLOSURE]

2

as a disturbance of their
left routine, ^{and} appeared & acted
as if they didn't have ^{any} ~~any~~ ^{other} ~~other~~ much
pride in the Navy, or ^{to} ~~to~~ accomplish things that would
add to the Navy's expectation
¶ They turned down every
project & went out of their
way to do so, ~~so~~ ~~so~~
no one would do a thing
to help, except Daniels &
he is powerless to get anything
done if the Dept heads
disagree, ~~He~~ ~~He~~
~~all~~ ~~all~~ by ^{most} easy
The Navy boys are fine
fellows & one cannot help
liking them, but why
they act the way they do
is a mystery to me.

[ATTACHMENT/ENCLOSURE]

I hope you are in good health
and the next time I will
get public recognition for
what you have done for us
Please you are greatly appreciated

Karen [Signature]

THE SECRETARY OF THE NAVY.
WASHINGTON.

December 5, 1918.

My dear Mr. Edison:-

I have your esteemed favor and note with pleasure the high terms in which you speak of Lieut. Warren Stone Harris, and recommend his promotion. I will take this matter up and I need not tell you I will be happy if your recommendation can be carried out.

I wish you to know of my deep sense of appreciation of your devotion to the Navy and to the cause of your country in this great war, and for your wisdom and wise counsel.

Always with sentiments of esteem and high regard, I am.

Sincerely yours,

J. Franklin Bell

Mr. Thos. A. Edison,
Orange, New Jersey.

13

December 6, 1918.

Resr Admiral Geo. E. Burd,
Navy Yard,
Brooklyn, N.Y.

My dear Admiral:

I am sending, herewith, blue prints
of a holder for my listening device for Submarines,
which you kindly offered to have made at the Navy Yard.

You will doubtless remember that I sent
Mr. Henry G. Wolfe to see you about this when he went
to the Yard to fix up that small motor boat. Mr. Wolfe
is one of the employees of the New York Edison Company.
They loaned him to me for the duration of the war, and
he is now about to return to the New York Edison Co. at
15th Street and Irving Place.

He understands my plans about the listening
device, and perhaps you will not object to his dropping
into the Yard every day or two to supervise the making
of the holder, shown by the blue prints. If you will,
therefore, drop him a note when the work is started, he
will drop in occasionally and watch its progress.

Yours very truly,

A.

Dec. 6th 1918. File Wolfe

The T.N.T.-Oleum Shells (20)
are in two wooden box in
Vault No 8 also some granulated
T.N.T. for timing around the caps
are in can near the boxes.

The Caps (fulminates) are in
small package in Vault #9.

The fuses (time) are in Vault
on Lakeside Ave. see Jack Francis.

The ammunition for Mock gun is in
Vault #8.

The Mock Gun is in hole near Mock
Shop - 1st floor.

The 3" gun is in lot near pumping
station Norristown.

Chopper name is Muller or
Moller (Stanley Barber's name) H.G. Wolfe (over)

Sulphuric
Anhydride

1 lb shell cases & bullet in
4 Govt. containers in Hall naming to
Machine shop.

U.S. Bachem J.F. 192.
New York, N.Y., December 6th, 1918.

File Harris

From : Lieut. Warren L. Harris.
To : Mr. Thomas A. Edison, Orange, N.J.

Subject : Arrangement for listening device, installation on
vessels.

Enclosures. One. (Drawing of arrangement of installation.)

My Dear Mr. Edison,

1. I am enclosing a drawing of an idea of mine relative to the installation of your apparatus ~~on~~ on vessels that will overcome various conditions that seem to be giving considerable trouble in producing noises from the water line or your present arrangement, and also the various ship's noises.

2. First I will ask you to take this from me as an interested party, and part of my idea is based solely from the point of view of a seaman, and of some experiences connected with submarine bell devices on different ships of the Navy, and after following carefully your different experiments aboard the Reposa and the Bachem.

3. My idea is that to accomplish your aims i.e.; getting away from water line noises, which on the present arrangement varies according to the pitching of the vessel, and eliminating all noise that is caused by the bow wave, and the various noise produced by the ship itself, is to have this arrangement below the ship's water line which while underway would get away from all surface noises, caused by the bow wave, and other rolling waters, and also eliminate all chances of the apparatus becoming disabled by coming in contact with ice or other obstructions that all ships are subject to encounter underway, and by careful insulation overcome all of the noises from the vessel itself.

4. I would install this on both sides of the bow, and run the tubes up to the fore peak where a listening chamber could be installed which would make everything sound proof, and the only noise that would be noticeable would be the water passing the diafram ~~which~~ which you are bound to have no matter how it is rigged. the same stream line form being used in the outrigger or fin.

5. This arrangement is also capable of being repaired without the vessel going into dock, being easily disassembled by removing the tube bringing up the diafram with it into the hull of the ship. this arrangement of course is based on permanent construction, the war being over, and no desire to save time by putting the device aboard the ship in the present rig to save putting the ship in a dock for the first installation. I will appreciate your advice in the matter, and would appreciate a blue print of the enclosed drawing.

Very respectfully,

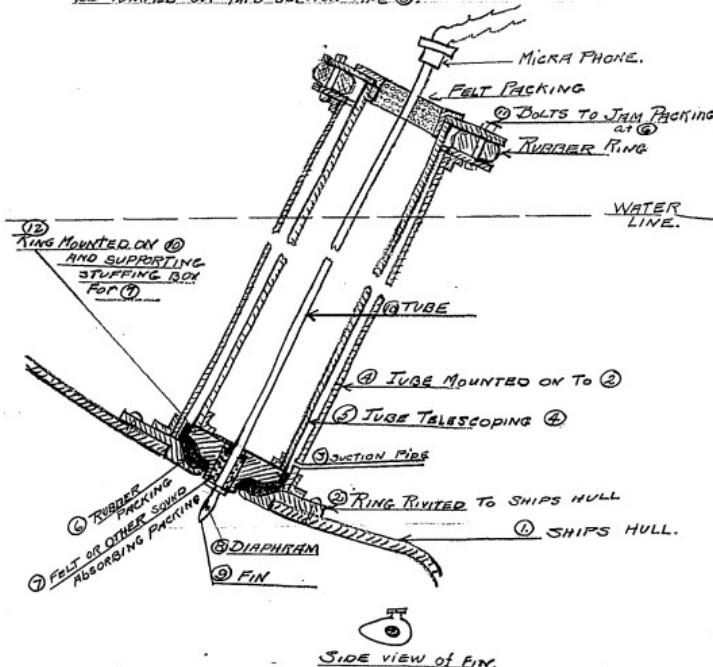
Warren Harris

[ATTACHMENT/ENCLOSURE]

TUBE ⑥ TELESCOPING ④ CAN BE REMOVED BY REMOVING PARTS ⑩ GIVING ACCESS TO THE FIN CONTAINING DIAPHRAGM AND PARTS EXPOSED UNDER WATER.

THE RUBBER PACKING ⑦ IS MOUNTED BY SCREWS ONTO RING ⑨ AND COMES OUT WITH TUBE ⑥ & ⑧ BEING ABOVE WATER LEVEL THIS CAN BE DONE WITH OUT GOING ON DRY DOCK.

WHEN TUBE HAS BEEN INSERTED & BOLTS ⑩ DRAWN UP TIGHT SO AS TO JAM Packing ⑦ WATE LEFT BETWEEN ⑨ & ⑩ CAN BE PUMPED OUT THRO SUCTION PIPE ⑤.



NAVAL CONSULTING BOARD OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SAUNDERS,
VICE PRESIDENT.
BENJAMIN B. THAYER,
VICE CHAIRMAN.
THOMAS ROBINSON,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

Dec. 6, 1918.

To the members of the Naval Consulting Board:

Dear Sirs:

The next meeting of the Naval Consulting Board will be held in the Board Room of the American Institute of Mining Engineers, Engineering Societies Building, 29 West 39th St., New York, on Saturday December 14th. Luncheon will be served in a private room at the Engineers Club.

The informal meeting will begin at nine A.M. and the formal meeting at ten. The attendance of every member is desired, as important business will be brought before the meeting.

Very truly yours,

Thomas Robinson

Secretary.

December 9th, 1918.

Wright wrote

Mr. T. A. Edison:-

It would seem that your audible range finder
of any value in measurement

In many places where forests, marshes and other
obstacles intervene, a great deal of time and expense might be saved

by using an audible method instead of an optical one.

Where the exact characteristics of a sound are now
important, a recorder element might be used which would indicate and
differentiate from three stations.

The attached sketch shows in schematic form one way
in which a single recorder point might be controlled, so as to give
readings from three stations, as is necessary in audible range finding.

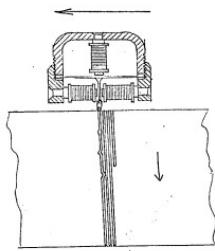
The use of a single recorder element instead of three
separate recorders, (as we have been using), would, of course, permit
the recorder to travel the whole length of the cylinder and thus give
three times the length of recording surface for a given sized cylinder.
It would also obviate the necessity of having to line up three recorders
accurately, with one another.

NHH:GAF

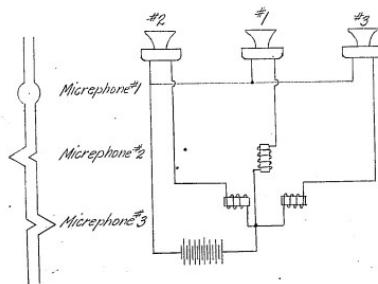
H. H. HOLLAND

Wright

[ATTACHMENT/ENCLOSURE]



Enlarged View of Cut.



Wiring Diagram.

SAMUEL C. SHAFFNER
CONSULTING ENGINEER
CHICAGO
December 12, 1918.

Mr. Thomas A. Edison,
Edison Laboratories,
Orange, New Jersey.

My dear Mr. Edison:

Since I last heard from you, I was given the commission, but realizing the short duration of the war, I declined to accept it, to get back into work which I consider more permanent.

I have been assisting in some development work, which I feel you will be interested in knowing something about, and I will give you, in a general way, what I have seen.

The very feeble current taken from the wireless telegraph aerial is led into a two stage audion (this audion is, of course, especially designed for this work). From the audion the amplified current is led into a modified head telephone, working in front of and very close to a small jet of air, which is under about 1" water pressure and escaping from a 1/32" nozzle. A horn is placed so the end of this air jet just enters the small end of the horn and enables one to hear the wireless message some forty or fifty feet away from the horn.

Another arrangement of this air jet is used for heating and cooling a very fine platinum wire, the heating and cooling of which causes a semi-automated relay to work so that the relay operates a sounder, which causes a paper tape to go back and forth, under a fountain pen, and records the dots and dashes very clearly on the tape.

Both of these arrangements work very nicely. This work is partly for the government and is supposed to enable the submarine cables to be worked with very small current, thereby increasing the sending capacity fully 100%.

The arrangement of the sensitive air jet I thought probably would be of extraordinary interest to you, as it would probably be possible to use some such an arrangement in connection with a phonograph. This application would be necessary only where and in connection with a plan that I have heard of being worked on, that of having a hardened steel, magnetic wire, being drawn in front of an electro magnet, being produced by the previously polarized wire or disk. I assume you are familiar with this arrangement. I have set by the side of this instrument and saw the tape record accurately, a message from the wireless station at San Diego, California and Key West, Florida.

I have been told that the Victor Phonograph Company is working on a new instrument, which they expect to have out within a year, along these lines

Mr. Thos. A. Edison, No. 2,
12- 12- 18.

of magnetic polarization of a wire tape or disk.

Trusting that this will be of interest to you, also you and
Mrs. Blison continue in the best of health, I am,

Sincerely yours,

Samuel C. Shaffner

6107 Kimball Avenue, Chicago, Illinois.

P.S.

"I would rather hear a drunken sailor sing "Yankee Doodle" on an
Edison instrument, than to hear Galli-Curci sing "La Traviata" on a
Victor, etc., machine"--- Mrs. Shaffner.

N.N.I.S.

In reply refer to No.

NAVAL DEPARTMENT
OFFICE OF NAVAL INTELLIGENCE
BRANCH OFFICE
288 FOURTH AVENUE
NEW YORK

Smell

December 12, 1918

Ask if I cannot keep it

Thomas A. Edison, Esq.,
Orange, N. J.

Dear Mr. Edison:

The Office of Naval Intelligence
has ordered this office to have all identification
cards returned at once, as this office is closed.

In accordance with these instructions,
will you kindly send your identification card to the
Branch Office of Naval Intelligence, 288 Fourth Avenue,
New York, at your earliest convenience.

Very truly yours,

Admiral

Lieutenant, USNRF
Acting Officer-in-Charge.

6108

December 14, 1918.

Mr. A. Duer Irving..
Lieutenant, USNRF
Acting Office-in-charge,
Navy Department,
288 Fourth Ave.,
New York, N.Y.

Dear Sir:-

Your letter of the 12th instant to Mr. Edison asking him to return his identification card has been received.

Mr. Edison is, of course, quite willing to return the pass if it is deemed necessary, but he would like to retain it, if permissible, and has requested me to write and ask if there would be any objection to his doing so.

Yours very truly,

Assistant to Mr. Edison.

December 16, 1918.

Rear Admiral W. Strother Smith, U.S.N.,
N A V Y D E P A R T M E N T ,
Washington, D. C.

My dear Admiral:

Allow me to hand you herewith
our Laboratory bill for experimental work done
by Mr. Edison covering a period, September 30,
1918, to November 30, 1918, at cost, amounting to
\$12,423.45.

This bill is sent in duplicate, cer-
tified to by Mr. Edison.

When the check is ready, you can for-
ward it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

A.

December 15, 1918.

Hon. Newton D. Baker,
The Secretary of War,
Washington, D.C.

My dear Mr. Secretary:

Allow me to hand you here-
with our Laboratory bill for experiments done by
Mr. Edison, covering a period, September 30, 1918,
to November 30, 1918, at cost, amounting to \$3,171.04.

This bill is sent in duplicate, certified
to by Mr. Edison.

When the check is ready, you can forward
it to me as usual.

Yours very truly,

Assistant to Mr. Edison.

Enclosure.

December 17, 1918.

Mr. Samuel C. Shaffner,
6107 Kimball Ave.,
Chicago, Ill.

Dear Mr. Shaffner:

Your letter of December 12th
came to hand in due season and I showed it to Mr.
Edison.

He wants me to say to you in reply that
Parsons, the inventor of the steam turbine, worked
out an air scheme similar to yours and we made half-
dozen. It amplified the sound enormously.

With kind regards, I remain,

Yours very truly,

Assistant to Mr. Edison.

A/6121/

cc s.

N. H. Holland

Geological

United States Geographical Survey:

We have been developing for the use of the United States Navy an acoustical device for determining the position of concealed guns and it occurred to us that the same apparatus or scheme might be used to advantage in surveying under conditions where it was very difficult to use ~~an~~ transit.

The general plan is to locate on a measured base line three points to receive the sound. The sound from these three stations is electrically recorded on a phonograph ~~chart~~, which at the same time also receives a record of accurate time intervals.

As with this apparatus, we are able to tell exactly the length of time in which the sound reaches the different stations. We are able to locate the points where the sound originated.

The tests we have made indicate that very close results can be obtained, and we would be interested to learn whether you consider the audible method of locating unknown points would have any application in your work.

Yours very truly

(6171)

12/18/18.

To HIRSH, PHILADELPHIA
Via AIR

PERSONAL
PRIVATE

NAVY DEPARTMENT
(BUREAU OF SUPPLIES AND ACCOUNTS)
WASHINGTON, D.C.

16 December 1916

m c'y

Mr. Thomas A. Edison,
Orange, New Jersey.

Great and Good Friend:

I have not sooner acknowledged your very wonderful letter of 2 December because I have been trying to be fashionable and get into the casualty list with influenza. Having failed in this, I expect to fall again in my effort to tell you how much I appreciate the kind things you were good enough to say about me and my work.

True, I have tried very hard. Likewise, I have done the best I could. But my efforts would have amounted to little or nothing if I had not been surrounded by the most efficient staff that I think any man ever had anywhere. To them and to the generous encouragement of a few powerful friends like yourself may be largely attributed such measure of success as I have been able to attain.

If you think that I am camouflaging in the least degree in the statement I have just made, I wish you could be here some day when distinguished visitors are looking me over and see me show them your photograph which is at my right hand and so close to me always that I ~~can~~ actually shake hands with you if you would only let me. What I tell people when they exclaim over my having an autographed photograph of yourself is that your inscription is the result of the most remarkable and successful camouflage ever attempted by anybody in the NAVY.

I mean that I felt almost like a confidence man when I accepted from you your picture on which you had written with your pen: "To a live wire, my friend Samuel McGowan, U.S.N."

And yet, however undeserved, it accomplished a lot of good because I swear to you that I have tried ever since then to actually ~~be~~ a live wire and thus keep you from ever finding out how far you had over-estimated me.

For the rest, I promise you that I am now trying and shall hereafter continue to try to live up somewhere near to the very high estimate expressed in your good letter to which this is the reply.

With sincere assurance of my grateful appreciation and trusting that I may have the pleasure and honor of seeing you when you next visit Washington, I am

Yours faithfully, *Samuel McGowan*

December 19, 1918.

Hon. Newton D. Baker,
Secretary of War,
Washington, D.C.

My dear Mr. Baker:

One of the items in the line of my experiments for the Secretary of the Navy was locating the position of guns by sound through the medium of phonographic records.

My early experiments were made with a shot gun and guns of small calibre, but I did not deem our work complete until tests were also made to include big guns. Therefore, I sent my young men to Sandy Hook, and I am forwarding to you herewith a copy of the report I have made to the Secretary of the Navy showing the results obtained.

As

As the subject is one that may be of interest to your Department, perhaps you may deem it desirable to spare the time to read this report.

Yours very truly,

*17/13
not dictated*

Secretarial Service Department

THOMAS A. EDISON, PERSONAL

Edison Phonograph Works.

Function: Government Orders.
S U B J E C T:

Memorandum No. 4630
December 19, 1918.
Date

Mr. John P. Constable,
Division Manager Laboratory:

Mr. Howard Eckert, Secretary of Edison Phonograph Works, has requested me this morning to advise him promptly the final amount which is to be billed to Edison Phonograph Works for the "Mark 3-B" work for United States Government, which we have been performing on their orders. I have asked Mr. Ryder to get this together.

We should go very carefully over any orders which have been placed on the outside for work in this connection and make sure that all bills for such work have been received and taken into our account against Edison Phonograph Works. If these accounts with outsiders are of any considerable amount and there is the remotest possibility of these concerns sending us further charges of which we are not informed at the moment, will you be good enough to refer such items to me with full information so that I can consult the Legal Department and arrange for letters to go to such vendors to require a statement from them of their charges against the Laboratory and get a release from any further charges?

If there is any further Government work being done in the Laboratory for Edison Phonograph Works, would suggest that you consult with them to ascertain whether or not work should be stopped.

Mr. Eckert tells me that it is his belief that the Laboratory was instructed some time ago to discontinue all work on the "Mark 3-B" Order, and I understand from Mr. Ryder that Mr. Olson has stated that no work has been done on this in the laboratory since the latter part of November.

R. W. Mellow.

Secretary.

RWM:ME

Mr. Ryder - Mr. Howard Eckert.

Copies to:-

1533-3-5G-10-18

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY, INVENTIONS
AND REFER TO MD.

WSS:MW

NAVY DEPARTMENT
WASHINGTON

S

Dec. 20, 1918

My dear Mr. Meadowcroft:

I am enclosing you a copy of a letter that I have just addressed to Mr. Saunders. Referring to the aid to Mr. Edison, I have included you as understood to be the one I have in mind. I am sorry that no ladies are included in the list.

Please wire me on receipt of this letter whether Mr. Edison will come or not and impress it on him that there can be no waiting beyond the hour set.

Very sincerely yours,

Wm. H. Mayo
Rear Admiral U.S.N.

Mr. Wm. H. Meadowcroft,
Edison Laboratory
Orange, New Jersey

6196

[ATTACHMENT/ENCLOSURE]

WSS:MW

December 20, 1918

My dear Mr. Saunders:

I have just been informed by the Secretary that I am to go to New York, be there on the morning of the 26th and look out for the Naval Consulting Board in viewing the review.

The U.S. Penguin will leave the foot of 97th Street North River New York City at 8 A.M. promptly. I have cards for each member of the Naval Consulting Board, one for each. This does not include any one who is not a member of the Board except I have requested an extra card for some one to accompany Mr. Edison. I understand no ladies have been invited to go on the Penguin.

On the same boat will be the Senate and House Naval Committees and another boat will carry the foreign attaches. The program will be for these two boats to follow the Mayflower down to meet the Fleet and after the Fleet has anchored to circle around the Fleet returning to their docks and proceeding to the reviewing stand on Fifth Avenue and 23d Street in automobiles which will be furnished by the Auxiliary Motor Corps.

I will be at the New York Yacht Club some time Christmas afternoon or evening and will be at the dock early Thursday morning having with me the tickets of admission. It is extremely important that members arrive in ample time to go on board of the boat before 8 o'clock as the boat will leave its dock promptly on time. Otherwise it would be too late and might result in delaying the Fleet.

I am sending a copy of this to Mr. Robins and am also communicating direct with Mr. Edison on the subject. I am calling Robins on the long distance phone now so that he may get out his notices in ample time and be ready to take them up with this letter tomorrow morning.

Very sincerely yours,

W. L. Saunders, Esq.,
11 Broadway
New York City

13

December 21, 1918.

My dear Burd:

My man Hanley will present this. He is an experimenter who has charge of experiments on Sachem. I want a small job made in a hurry so we can be ready for a storm outside of the Hook.

Our listening rod sometimes fails to function and is broken. We know the trouble and want to rig up another one, roughly made, to cruise outside the Hook so we can get it to ride O.K., no matter how high the waves are.

Will you please turn the young men over to one of your men who will push the job. Hanley has the drawings.

I can get a blanket order if necessary from the Secretary to cover any work of this kind, unless you think the general order you already have is sufficient.

Yours sincerely,

Rear Admiral G. E. Burd,
New York Navy Yard,
Brooklyn, N.Y.

A.

[ATTACHMENT/ENCLOSURE]

Mr Deane & Board

My man Harley will
receive this H^r is experimenter
who has charge of ^{of experiments} Sachem^{one}
~~He~~ I want a small job
made in a hurry so see
Can be ready for a storm
outside the hook -

9 Our listening rod sometimes
fails to function & is
broken & we know the trouble
is easiest to rig up another
roughly made to cause
only side the hook so we can

get it to ride & no
matter how high the
waves are -

¶ Well you please turn
the young men over
to one of your men
who will speak the
job - Harley has the
drawings x

¶ I can get a blanket order of
necessary from the Accts
Elson
Cover any work if this
kind unless you think the general
order you already have is sufficient

N.N.LS

NAVY DEPARTMENT
OFFICE OF NAVAL INTELLIGENCE
BRANCH OFFICE
288 FOURTH AVENUE
NEW YORK

December 31, 1918

Thomas A. Edison, Esq.,
Orange, N. J.

My dear Mr. Edison:

I take pleasure in advising you that your request to retain your identification card of the Office of Naval Intelligence, has been granted by the Director, Admiral Welles.

It will be necessary, however, for you to send it in to the Office of Naval Intelligence, Washington, (attention of Lieutenant Albert Z. Gray) for cancellation, when it will be returned to you.

Yours very truly,

Admiral

Lieutenant, USNRF
Acting Officer-in-Charge.

Mr. Edison: They evidently think
you want the pass for
sentimental reasons.
Meadowcroft

6184

George Bennett Bankford Jr.

Bloomfield, N.J.
48 Spruce St.

Thomas A. Edison Inc.
West Orange, N.J.

Attention of Mr. Meadowcroft

Dear Sirs:— In my hurry rounding
out the termination of my work
at the Laboratory — I failed to get
in and bid you "goodby". However
I am writing at this time to
express my appreciation of what
you did for me in connection
with the Navy Dept. and other
incidentals and I thank you.

I should have liked
very much to remain with the
Edison organization — but the
opportunity which came unsolic-
ited to me was really too good

to turn down.
I am back with the
Company for whom I worked
before the war. The owner has
expressed his desire to develop
me as his protégé and I start
with an advance in salary.

I keep a scrap book of
my efforts in business and
feel that it would be far from
complete without a letter from
you. May I have an expression
of opinion from the Edison
Lab. as to my efforts during
the year I was affiliated - be
it good - bad - or indifferent.
I presume the personnel dept.
has an outline of some sort.
And too - Mr. Meadowcroft,
might I have a copy of the last

#² letter sent the Navy Dept, which
requested an indefinite leave
of absence - dated about June
6-1918. - ?

With best wishes for a
Merry Xmas and a Happy prosperous
New Year, I remain

Very truly yours,
John H. Campbell Jr.

Dec 21-1918

NAVAL CONSULTING BOARD
OF THE UNITED STATES

THOMAS A. EDISON,
PRESIDENT.
WILLIAM L. SANDERS,
VICE PRESIDENT.
BENJAMIN S. THAYER,
VICE CHAIRMAN.
THOMAS ROBINS,
SECRETARY.

OFFICE OF THE SECRETARY
13 PARK ROW, NEW YORK

To the members of the Naval Consulting Board:

Dec. 21, 1918.

Dear Sirs:

Secretary Daniels has made the following arrangements whereby the members of the Naval Consulting Board may take part in the Review of the Fleet, which is due to arrive Thursday morning, Dec. 26th,

The U. S. S. Penguin, a new mine-laying vessel, has been assigned to the Board and to the Senate and House Naval Committees, and will leave the dock at the foot of West 97th St., New York, promptly at 8 A.M. on Thursday, December 26th. Admiral Smith will be on the dock early and will have passes for the members of the Board. There is one pass for each member and they are not interchangeable. None but members of the Board are invited. Ladies or other guests cannot be admitted.

At 8 A.M. the Penguin, following the Mayflower and another vessel carrying foreign diplomatic officers, will sail to meet the Fleet, and after the Fleet has anchored will circle around the vessels and then return to the dock, where our members will be met by automobiles of the Auxiliary Motor Corps and taken to the Reviewing Stand at 23rd St. & Fifth Ave., where seats will be provided. Luncheon will be served on board the Penguin.

Our members are especially urged to be at the dock well before eight o'clock in order that they may be sure to meet Admiral Smith, obtain their passes and go on the vessel before the time of sailing.

Very truly yours,

Thomas Robins,
Secretary.

TR/gt

7

Telegraph

Dec. 23, 1918.

Rear Admiral W. Fletcher Smith
Navy Dept.
Washington, D. C.

M.M. Edison wishes me to
express his regret he will not
be able to attend the review.

He has heavy cold and would
not wish to risk the trip.

W.H. and W.H. Meadowcroft
sent by 10^{AM}
12/23/18.

December 23, 1918.

Rear Admiral W. Strother Smith, U.S.N.,
Navy Department,
Washington, D.C.

My dear Admiral:

I received this morning your letter of the 20th instant enclosing the carbon copy of your letter to Mr. Saunders. I immediately went to show it to Mr. Edison and he asked me to send you a telegram, which was dispatched immediately. I am enclosing a confirming copy of the telegram.

I do not regard his cold as serious, but he does not wish to run the risk of its growing worse.

Let me thank you for your kind intentions regarding myself.

Very truly yours,

Assistant to Mr. Edison.

A/6176.

December 24, 1918.

Mr. George B. Hanford, Jr.,
48 Spruce Street,
Bloomfield, N.J.

Dear Mr. Hanford:

Your letter of December 21st was received. I am sorry that we did not get an opportunity to exchange mutual good-bye's, but let me now express the hope that your future will be very bright and prosperous, and I certainly extend my very best wishes to you.

It is a great pleasure to say that your services while in our employ were of the most satisfactory character. We can certainly testify to your intelligence and trustworthiness and also your ability and willingness to hustle, and we are all glad that we have had the opportunity of being associated with you during the last twelve months.

With the Season's Greetings, I remain,

Yours sincerely,

Assistant to Mr. Edison.

A/6187.

12/28/18
Secretarial Service Department

THOMAS A. EDISON, PERSONAL

Edison Phonograph Works.
Function: Government Orders.
S U B J E C T:

Memorandum No.
December 24, 1918.
Date

Mr. J. P. Constable,
Chief Engineer:

Mr. Howard Eokort, Secretary of Edison Phonograph Works,
has telephoned me this afternoon that all orders on which the Laboratory
is engaged on instructions of Edison Phonograph Works for account of the
United States Government must be wound up as of Saturday, December 26, 1918.
The Phonograph Works must render a final account to the Government within
two weeks.

This means that the Laboratory will have to figure up the
final cost of all of these orders and bill the Edison Phonograph Works, so
that they may make their accounting to the Government.

I have asked Mr. Eokort to see to it that the Laboratory is
advised in writing regarding this.

R. W. Kellow,

RWK:FS

Secretary.

Copies to:-

1533-B-5C-10-18

(98) MOTORS
Have I ever seen man
find this motor
at some of the
shops that build
small motors
they may have
odds & ends -
try all the shapes
also shop around

My

motor frame:

Round, not over 4"
dia., not over 5"
long exclusive of
bearing housing or
hub.

Shaft

not smaller than
 $\frac{5}{16}$ " nor larger than
 $\frac{7}{16}$ " must protrude
at least 1" at either
end.

must either have
ball bearings or
have housing large
enough to mount
a ball bearing
 $1\frac{3}{16}$ " dia. $\frac{3}{8}$ " wide

Winding

120 V.-D.C.

must make 5000 or
6000 R.P.M.
without engine heating
To run at constant
speed, constant
load of ~~for use~~ 3 pounds
fly wheel on ~~other~~ ends

1 "normal" thrust
bearing $\frac{3}{4}$ " bore

~~Herbold & Payne~~

wants $\frac{1}{32}$ ab sheet

want 6 sheets

15" x 48"

Meadcraft
~~Mr.~~ If he can't get
120 Volts we can use
any voltage as we
have batteries.

In case he finds 3 or
4 motors that
is near these
specifications
send them all -

Send all by Express

Edison

Kellon Charge Special
light for cargo
boats -

Naval Consulting Board and Related Wartime Research Papers
Subjects -- Daylight Illumination Experiments (1918)

This folder contains correspondence and other documents pertaining to photometry experiments on water and sky brightness conducted for Edison in Key West, Florida, by William F. Little of Electrical Testing Laboratories. The oversized data tables enclosed with Little's report have not been selected.

PRESTON S. MILLAR,
GENERAL MANAGER.

CLAYTON H. SHARP, PH.D.
TECHNICAL DIRECTOR.

F. M. FARMER, M.C.
CHIEF ENGINEER.

ELECTRICAL TESTING LABORATORIES

GENERAL OFFICE AND LABORATORIES
BOTH ST. AND EAST END AVE.
NEW YORK

March 30th, 1918.

Mr. Thomas A. Edison,
Keywest Navy Yard,
Keywest, Florida.

Dear Sir:

Enclosed you will find tables of photometric measurements made in Keywest and in the vicinity between February 18th and 27th, inclusive. You will note that the formal report explaining the tables is not attached. This will come forward Tuesday or Wednesday of next week, but I believe that you will find the tables self-explanatory, for instance, table 1, sixth series of measurements should be interpreted as follows:

"South"

"Clouds, 1" indicating light Cumulus clouds in the direction of observation, "Time" time of observation "3.46 pm.", "millilambert" brightness of the sky "2330," etc. The illumination measurements made at this time should be interpreted as follows:

"Horizontal" illumination at "4.07 pm.", "foot candles 4000".

"Vertical illumination" with the photometer test plate facing the "west" the clouds in the western sky are medium Cumulus, "time 4.09", "foot candles 9150", etc.

At the bottom of the page the brightest clouds in the sky at the time of observation are indicated, namely at an "altitude of 10°" in the "south at 12.21", a "millilambert" brightness of "3130" was found, etc.

Table 2 shows the sky brightness at zenith on the "Buoy Dock in the Navy Yard on February 20th" (next to the last series of measurements) "Time 11.41" the sky showed a millilambert brightness of "1420". There was a haze in the sky in the direction of observation; haze in the eastern portion of the sky from horizontal to 80° altitude; haze in the western portion of the sky from 15° to 75° altitude; heavy white Cumulus clouds in the southern portion of the sky at 80° altitude; heavy Cumulus clouds in the northern portion of the sky at 80° altitude, and the sun under a cloud.

Mr. Thomas A. Edison.
March 30th, 1918.

Table No. 6 - (a) Indicates the direction of observation
(b) The amount of sky covered by clouds in tenths
(c) The character of the clouds in the sky.
(For instance, the first series of observations the clouds in the direction of observation were dark Cumulus; 4/10 of the sky was covered with the clouds; and the general character of the clouds were medium and dark Cumulus)

Table No. 7 - The brightness of the sky and water are given at the same angle from the horizontal; the former above, the latter below; the altitude is therefore designated plus and minus. For the first series of measurements the clouds in the direction of observation are gray Cumulus; the time of the observation for the sky was "6.11" and for the water "6.12 am."; the milliambert brightness for the sky 8.05 and for the water 1.54.

I believe that with the above explanation you will find no trouble in understanding the tables and the report will follow later.

Yours very truly,

Wm. F. Little
Engineer in Charge of Photometry.
by M.L.

W.F.L./M.S.

Enclosure - tables.

PRESTON S. MILLER,
GENERAL MANAGER.

CLAYTON H. SHARP, PH.D.
TECHNICAL DIRECTOR.

F. H. FARMER, M.E.
CHIEF ENGINEER.

ELECTRICAL TESTING LABORATORIES

GENERAL OFFICE AND LABORATORIES

BOTH ST. AND EAST END AVE.

NEW YORK

April 17th, 1916.

Order No.16804-S

Mr. Thomas A. Edison,
Key West Navy Yard,
Key West, Florida.

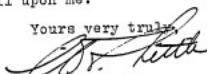
Dear Sir:

Enclosed herewith you will find our complete report No. 26727, covering work done in Key West, Florida, between February 18th and 27th inclusive. In making out this report I have endeavored to include all of the information necessary in interpreting the results. If we can be of any service in helping to interpret the results or compiling other data, please call upon us. If there are any points which are not entirely clear, I should be very glad to make further explanations.

In the case of table No. 8 where the relative brightness of the white plate immersed in the Gulf Stream, it will be noted that the plate could be seen at a considerable greater depth than 20 feet. However, the small waves have produced so much refraction and shifted the apparent position of the plate so rapidly and to so great an extent that it was not possible to hold the photometer field on the plate long enough to secure measurements. Further, the measurements at a depth of 15 to 20 feet are quite uncertain for the same reason. When the plate was immersed upon the shady side of the submarine chaser the sun probably reached the plate by passing underneath the chaser at a depth of 10 feet and greater.

If there are any published data on daylight illumination which you desire, please call upon me.

Yours very truly,



W.F.L.C.
Engineer in Charge of Photometry.

W.F.L.C.

Enclosure.

[ATTACHMENT/ENCLOSURE]

ELECTRICAL TESTING LABORATORIES

GENERAL OFFICE AND LABORATORIES

BOTH ST. AND EAST END AVE.

NEW YORK

WENDY E. WOZNIAK A. ERICKSON

DETERMINATIONS OF WATER AND SKY BRIGHTNESS AND DAYLIGHT ILLUMINATION AT KEY WEST, FLORIDA AND VICINITY.

0300E3 110-16604-S

Purpose of Test

The purpose of the test was to determine the ranges and order of magnitude of water and sky brightness and daylight illumination under different conditions of sky throughout the day.

Test

A series of investigations were made covering different periods of eight days. In order to determine the brightness above the horizon the sky brightness measurements were made on the meridian and on the arc of a great circle passing through the East, Zenith and West at altitudes extending from the horizon to the zenith at 22-1/2 intervals. As the cloudiness in the direction of observation has a considerable influence on the degree of brightness, the character of such cloudiness is noted. Daylight illumination is also greatly influenced by the amount and character of the clouds in the sky. Therefore with the measurements, sky and cloud conditions are noted.

Key West is situated at Lat. $24^{\circ} 33'$ North, Long. at $61^{\circ} 46'$ West and is in the central time belt using the 90th meridian time. During the time of measurement (February 18th to 27th inclusive)

[ATTACHMENT/ENCLOSURE]

report No. 26727

-2-

the equation of time varies from 14 minutes and 8 seconds to 12 minutes and 58 seconds; therefore the local apparent time for Key West is taken as 19 minutes later than 90th meridian standard time. In order that the measurements may be applicable to other locations, the time in all cases has been changed to local apparent or sun time. On February 18th the ~~sundial altitude~~ was ^{at noon} 56° .

It was hoped that measurements might be obtained on a cloudless day, also on an evenly overcast day, in order that data might be determined for the two extremes and the values interpolated for any conditions varying between these extremes. During the period between February 18th and 27th inclusive there was no day which completely filled either of these two conditions for any extended period of time. The weather bureau records for Key West were examined and it was found that but two evenly overcast days had occurred between September 1st, 1917 and the time of examination of the records, February 22nd, 1918. Further there had been but three or four days during this period when the sky was cloudless for any extended period during the day, and in no case during this time was the early morning sky entirely cloudless. On February 22d several times during the morning the sky was entirely cloudless, but this condition lasted for only a few minutes at a time. During each of the other days the clouds were present in the sky in varying amounts. Nevertheless measurements were made, even though the conditions were far from ideal.

In order to secure complete information, illumination measurements were taken to accompany the brightness measurements. In several cases the brightest clouds in the sky were measured and

[ATTACHMENT/ENCLOSURE]

Report No. 26727

-3-

found to be considerably brighter than the surrounding blue sky. In all cases they were heavy white cumulus clouds so located that the sun's rays fell directly upon them, increasing their brightness to a maximum.

Under all conditions the blue sky was found to be considerably brighter at the horizon than elsewhere, with the exception of that part of the sky adjacent to the sun.

Eight investigations were made, the results of which are discussed and summarized in the following pages and tables.

Investigation No.1. (Table No.1)

On February 18th the condition of the sky was not ideal but an investigation was made in order to secure values which, while not conclusive or indicative of the range of brightness under clear or overcast sky, might nevertheless be of value for interpolation. The photometer was placed on the southwestern parapet of Fort Taylor where an unobstructed view of the horizon could be had to the south and west with a sky line to the north and east having a maximum altitude of 3 degrees. The photometer was directed toward the south just above the horizon and measurements made from this position up to zenith and down to the north horizon at 22-1/2 intervals. The same procedure was followed pointing the photometer to the east and describing the same arc toward the west. These measurements were continued throughout the day until sunset. The observations taken at 11:32 a.m., showing light cumulus clouds, are somewhat low due to black smoke near the horizon (from the city).

Immediately after sunset (at 5:42) measurements were made of sky brightness near the horizon, (N, E, S and W,) as noted at the end of the table.

[ATTACHMENT/ENCLOSURE]

Report No. 26727

-4-

The cloud brightness values at the bottom of the page show the brightness of the heaviest white clouds noted during the day.

Investigation No. 2 (Table No. 2)

On February 19th and 20th a study was made of the brightness at zenith with different conditions of sky. Most of the measurements were made with the photometer pointing at clear blue sky with surrounding clouds in varying amounts. Cloud conditions and their positions are noted throughout. When clear blue sky without haze is observed, the brightness is apparently independent of the kind, amount or position of clouds in the sky.

(Table No. 3)

On February 20th, measurement was made of horizontal illumination from the moon. The moon was about half full (altitude not recorded). Therefore the intensity shown in the table of approximately half the published value* is consistent.

Investigation No. 4 (Table No. 4)

On February 21st the conditions of the sky were slightly less favorable than on February 18th, but an investigation was carried on in the hope that the data obtained might prove of some value for interpolation purposes. The measurements were made on Sand Key with the photometer so placed as to give an unobstructed horizon to the N., E., S. and W. The only buildings on the island were

*The maximum normal illumination intensity from the moon recorded as 0.030 foot-candle, horizontal illumination 0.022 foot-candle. I.E.S. Transactions 1908 "The Intensity of Natural Illumination Throughout the Day" by Leonard J. Lewinson.

[ATTACHMENT/ENCLOSURE]

Report No. 26727

-5-

the lighthouse and the weather bureau, and the photometer was placed at a sufficient distance so that little or no light was obstructed by the buildings. During these measurements no note was made of the amount of clouds in the sky, and the measurements were discontinued on account of extreme variability of the sky.

Investigation No.5 (Table No.5)

On February 22nd the sky was covered with a number of small shifting clouds throughout the entire day, therefore no measurements similar to investigations 1 and 3 were made. During the latter part of the afternoon measurements of water and sky brightness were taken from the top of the lighthouse. The water and sky were viewed at corresponding angles from the horizon with the supposition that the brightness of the water would bear a definite relation to the brightness of the sky at the corresponding angles. These data, however, are incomplete, and those made toward the shallow water are not applicable to deep blue water. Further the water was so far from the base of the lighthouse that it could not be viewed at an angle greater than 55 degrees to the horizontal.

Investigation No.6 (Table No.6)

On February 23rd the conditions of sky were good throughout the greater part of the morning and a complete set of data were secured from 6:25 in the morning until 1:06 in the afternoon. During these measurements complete sky conditions were noted, namely: (a) the condition of sky and kind of clouds, if any, in the direction of observation, (b) the amount of sky covered by clouds in tenths, (c) the kind of clouds in the entire sky. For example, the observations at 6:25 a.m. were taken at 2 degrees altitude (just

[ATTACHMENT/ENCLOSURE]

Report No.26727

-6-

above the north horizon.) The clouds in this direction were heavy white cumulus with 4/10 of the sky covered with medium and dense cumulus clouds. The brightness under these conditions was 101 millilembergs.

Investigation No.7 (Table No.7)

On February 26th an investigation of sky and water brightness was made on board the U.S. Gunboat Petrel. The photometer was placed in the after port life boat which overhung the water by 10 to 15 feet. During the measurements to the East and South the course of the ship was Southwest, and during the measurements West and North the ship's position was reversed so that in all cases an unobstructed horizon was secured. However, with the ship's course Northeast some of the brightness measurements of the water and the illumination measurements with the photometer test-plate directed toward the water are probably low, resulting from the fact that the ship itself threw a shadow and cut off light from the direction of observation. The change in the ratio between water and sky brightness for the same position may be accounted for by the difference in roughness of the water. During the measurements the ship was steaming forward with speed only sufficient for steerage way. The observations were made in the deep blue water of the Gulf Stream.

Investigation No.8 (Table No.8)

For the purpose of determining the reduction of brightness of a surface immersed in water at different depths, an iron plate four feet square was painted white and attached to four ropes so that it might be lowered into the water. The coefficient of reflection of the plate was determined while dry, and found to be 43 per cent.

[ATTACHMENT/ENCLOSURE]

Report No. 26727

-7-

On February 26th an investigation was attempted at the Buoy Dock of the Navy Yard, but the water was not sufficiently clear to render the results of any value.

On February 27th the plate and photometric apparatus were taken aboard a submarine chaser and the study made in the clear blue water of the Gulf Stream. The plate could be readily seen at a depth greater than 20 feet, but the refraction produced by the small waves shifted the apparent position of the plate to so great an extent and so rapidly that photometer readings could not be taken beyond this depth.

[ATTACHMENT/ENCLOSURE]

Report No. 26727

Table VIII

Relative Brightness of White Plate,
Above water (dry) considered as 100 per cent

Plate in Sunlight

| Distance below water, (feet) | Relative Brightness, per cent |
|------------------------------------|-------------------------------------|
| 0 | 100 |
| 0.5 | 72 |
| 1 | 50 |
| 2 | 42 |
| 3 | 38 |
| 4 | 34 |
| 5 | 28 |
| 6 | 24 |
| 10 | 19 |
| 15 | 13 |
| 20 | 6 |

Plate in Shade

| | |
|-------------|----|
| 1 | 50 |
| 2 | 36 |
| 3 | 35 |
| 4 | 32 |
| 5 | 26 |
| 6 | 22 |
| 10 | 18 |
| 15 | 15 |
| 20 | 10 |
| Water alone | 9 |

Coefficient of Reflection of Test-Plate

43 per cent

Approved by

Clayton H. Sharp.

Technical Director.



Engineer in Charge of Photometry.

Copied by CES.
Checked by *J. H. S.*
April 10th, 1918.

**Naval Consulting Board and Related Wartime Research Papers
Subjects -- Experiments (1918)**

This folder contains correspondence, financial documents, and technical notes relating to research on various projects conducted by Edison for the U.S. Navy and U.S. Army during 1918. The bills submitted regularly by Edison show that his main project for the Army was the destruction of wire entanglements; for the Navy, submarine detection and strategy and the phonograph range finder. There are also letters to and from the Office of the Chief Signal Officer dealing with experiments in field communications. A communication from Richard W. Kellow, secretary of Thomas A. Edison, Personal, indicates that the billing process was haphazard due to secrecy concerns and the rapidly changing nature of the work. At the end of the folder is a list of experiments from March 1917 to November 1918, with the laboratory order number, description, and cost of each.

Approximately 40 percent of the documents have been selected, including all of the substantive correspondence, a small number of technical notes directly relating to Edison, and about half of the financial material. Unselected documents include calculations and drawings by other experimenters (most of whom are unidentified), various printed tables and specifications, payment forms issued by the Army and Navy in connection with Edison's expense claims, and correspondence about minor accounting questions handled by Kellow and by Edison's personal assistant, William H. Meadowcroft.



E.I.DU PONT DE NEMOURS & COMPANY

WILMINGTON, DELAWARE

CHEMICAL DEPARTMENT

January 16, 1918.

Mr. Thomas A. Edison,
Naval Annex Building,
Washington, D. C.

Dear Sir:

OUR FILE RW-54:

Referring to our conversation in Washington, I am enclosing sketch of a shell which I have had made, showing a device for providing that, if leakage should occur, the leakage will lead toward the outside so that the detonating part of the shell is entirely protected from the contents of the shell. The soft steel ring indicated can be used, or the design may be changed so as to give a wider surface of contact below the thread so that an asbestos gasket can be used. I might say that we have many pipe lines, in which the same material is carried, which are joined by means of flanged pipe and asbestos packing, which practically never leak. We also use many thread joints wiped with red lead which do not show any signs of leakage, so I believe this joint can be made perfectly tight. Of course you may have already thought of an arrangement of this kind and I am sending it to you for what it is worth.

Yours very truly,

Chas. K. Reed

Chemical Director.

CLR, SJB

1910-14617

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY.

SOLD TO

United States Government,
 Army Department,
 Washington, D. C.

THURSDAY

YOUR ORDER NO.
 OUR ORDER NO.
 SHIPPING NO.

SHIPPED
 VIA

January 31st, 1919.

| CASES PACKAGES | GROSS WEIGHT | POUNDS | |
|--|-----------------------------------|--------|------------|
| 0 | | | |
| Experimental work in Laboratory on devices listed herein over period December 5th, 1917 to January 31st, 1919 at cost. _____ | | | |
| Laboratory <u>Order No.</u> _____ | Description _____ | | |
| 5746 | Destruction of Wire Entanglements | | § 1,944.82 |

I certify that the above bill is true and correct.

WHEN REFERRING TO THIS BILL
MENTION THIS NUMBER:

§ 11

NOTICE

Please do not alter the figures on the bill. If any errors or discrepancies are found, return for correction, so as to avoid confusion.

We do not insure delivery or send money orders, as they are not your risk, your shipment from us in case of loss or damage.

In case of loss or damage, make claim to carrier who has received it for goods sent on our order.

Office: The salesman have authority to collect our accounts.

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY

SOLD TO

United States Government,
 Navy Department,
 Washington, D. C.
 YOUR ORDER NO.
 OUR ORDER NO.
 SHIPPING NO.

SHIPPED TO
 VIA

January 31st, 1916.

WHEN REFERRING TO THIS BILL
 MENTION THIS NUMBER:

42

NOTICE

Please do not alter the figures
 in this bill. Any change or
 alteration will void it
 for settlement, so as to avoid
 confusion. We do not insure delivery or
 safety of goods sent by express
 at your risk after shipment.
 In case of loss or damage,
 make claim to express company
 required for goods in first class
 and forward same direct to Orange, N. J.
 Otherwise
 No salesman have authority
 to collect our accounts.

| CASES PACKAGES | GROSS WEIGHT | POUNDS | |
|---|--|----------|----------|
| Experimental work in Laboratory on devices listed herein over period December 5th, 1915 to January 31st, 1916 at cost. | | | |
| Laboratory Order No. | DESCRIPTION | | |
| 5005 | Submarine Detector | 6290.27 | |
| 5010 | Submarine Pumell | .04 | |
| 5011 | Dolforest Wireless | 15.19 | |
| 5013 | Phonograph Range Finder | 1146.35 | |
| 5016 | Visibility | 1076.26 | |
| 5027 | Shell Trajectory | 193.35 | |
| 5029 | Submarine Hydrogen Detector | 507.20 | |
| 5163 | Aeroplane Detection | 1464.51 | |
| 5452 | Invisibility of Fighters | 1105.30 | |
| 5454 | Telhood (by shield-observing on water) | .02 | |
| 5575 | Color Interference on Painted Ships | 50.52 | |
| 5603 | Anthracite Coal Test | 1.09 | |
| 5652 | Smoke Shells | 968.06 | |
| 6699 | Submarine Strategy Experiments | 2410.19 | |
| 5765 | Pinely-divided Form of Trinitrotoluol | 105.92 | |
| 5171 | Nitrogen Fixation | 16336.36 | |
| | | 96.42 | 16312.54 |

I certify that the above bill is true and correct.

I

E.D.118329

WAR DEPARTMENT,
WASHINGTON,

MWB
EN/BN
20.

February 9, 1918.

Mr. Thomas A. Edison,
Orange, N. J.

Dear Mr. Edison:-

file

1. The bill which you submitted to the United States Government for \$3,096.65, covering the cost of experimental work at your laboratory in the destruction of barbed wire entanglements, will be paid by the Engineer Department.

2. The erection and destruction of wire entanglements is one of the duties of the Corps of Engineers. The tests which you conducted and the results accomplished would be of great interest and value to that Corps.

3. It is therefore requested that you submit a confidential report to the Chief of Engineers, U. S. Army, giving a detailed description of the tests conducted and the results and conclusions reached.

Very respectfully,

Orlando C. Conine

Assistant Secretary of War.

G. C. C.

5

PURCHASE ORDER

1900-22

To Thomas A. Edison,
Orange, N.J.Please deliver the following not later than
See note belowORIGINAL
GENERAL ENGINEER DEPOT,U. S. ARMY,
1438 U STREET, WASHINGTON, D. C., FEBRUARY 11, 1918....Order No. 17216
GAM/NA

F. O. B. See note below

| ITEM | QUANTITY | ARTICLES | UNIT | TOTAL |
|---|-----------------------------------|----------|------|------------|
| <u>CONFIRMING ORDER.</u> | | | | |
| Experimental work in Laboratory on devices listed herein over period August 1st, 1917 to December 5th, 1917 at cost. | | | | |
| Laboratory Order No. | Description | | | |
| 5746 | Destruction of Wire Entanglements | | | \$3,096.65 |
| The above has been completed. | | | | |

Prices based on: Your recent quotation.
 Shipment via See note above
 Marks: " " "

W. H. ROSE,
Colonel, Engineers, N. A.

by 
Chief Clerk.

Requisition: 2483

Application: Experimental work performed for War Dept.
Charge to: Engineer Operations in the Field, 1918.

1. All replies include service, packing, storage, and all additional expenses.
 2. If the General Engineer Depot, Washington, D. C., is specified, the dealer will furnish the gross weight, contents, serial number, dimensions, and technical contents of each package, whereupon this office will take steps for the issuance of a bill of lading, and the General Engineering Department, Washington, D. C., will receive the same. The dealer will be advised by this office, and one copy placed in each case of package. If additional instructions are required same will be given by our inspector.

4. Immediately upon shipment a bill of lading or copy sent to this office, the original only to be certified as follows:

CERTIFIED CORRECT AND JUST; PAYMENT NOT RECEIVED.

The same to be signed by the creditor whose name, if a company or corporation, must be followed by name and official title of party signing. A copy of packing list, as provided for in paragraph 4, must be attached.

5. All bills and correspondence relating thereto must refer to the above order number.

СОВЕТСКИЕ ОДЕЖДЫ

THOMAS A. EDISON

ORANGE, N. J.
LABORATORY

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SOLD TO

United States Government

Army Department.

Washington, D. C.

www.oxfordjournals.org

◎ 人物·書影·評述

SNIPPED

VIA

December 5th, 1917

日本語版

PACKAGE

— 1 —

会员价：35.00元

FOUND

Experimental work in Laboratory on devices listed
herein over period August 1st, 1917 to December
5th, 1917 at cost.

| Laboratory Order No. | Description |
|----------------------|-------------|
|----------------------|-------------|

5746 Destruction of Wire Entanglements

3,096.65

I certify that the above bill is true and correct.

| CARRIER PACKAGEM | GROSS WEIGHT | POUNDS |
|--|-----------------------------------|----------|
| Experimental work in Laboratory on devices listed herein over period August 1st, 1917 to December 5th, 1917 at cost. | | |
| <u>Laboratory</u> <u>Order No.</u> | <u>Description</u> | |
| 5746 | Destruction of Wire Entanglements | 3,096.65 |
| I certify that the above bill is true and correct. _____ _____ _____ _____ _____ | | |

NOTICE
Please do not alter the figures on the bill. If any errors or discrepancies exist, kindly return the statement, so as to avoid any possible account. We do not insure delivery or carriage of goods. They are at your risk after shipment from our factory. In case of loss or damage, claim on carrier who has received for goods in first class order. Remit direct to Orange, N. J., office. No salesman have authority to collect our accounts.

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY.

SOLD TO

United States Government,
 Army Department,
 Washington, D. C.

TERMS:

100-254

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Please do not ship the frames
 on the bill. If any errors or
 differences exist, please return
 for correction, so as to avoid
 confusion of accounts.
 We do not accept delivery or
 sale carriage of goods. They
 are to be sent direct from
 our factory.
 In case of loss or damage,
 make claim on carrier who has
 accepted the goods in full
 and in regular order.
 Goods direct to Orange, N. J.,
 Office.
 No salesman have authority
 to collect our accounts.

| YOUR ORDER NO. | SHIPPED | TO | MARCH 31st, 1918 |
|--|--------------------|----------|------------------|
| OUR ORDER NO. | | VIA | |
| SHIPPING NO. | | | |
| CASES PACKAGED <input checked="" type="checkbox"/> | GROSS WEIGHT | POUNDS | |
| Experimental work in Laboratory on devices listed herein over period January 31st 1918, to March 31st 1918, at cost | | | |
| <u>Laboratory</u> <u>Order No.</u> | <u>Description</u> | | |
| 5746 Deconstruction of Wire Entanglements | | 7,551.13 | |
| I certify that the above is true and correct. | | | |
| <hr/> | | | |

398-3M813

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY.

Thomas A. Edison

SOLD TO United States Government,
Navy Department,
Washington, D. C.

Технологии

YOUR ORDER No.
OUR ORDER No.
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WHEN REFERRING TO THIS BILL
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四

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We do not insure delivery or safe carriage of goods. They

In case of loss or damage,

make claim on carrier who has
received for goods in first class
order.

Remit direct to Orange, N. J.,
Office.
No salesmen have authority
to collect our accounts.

March 5th 1918.

| CASEN PACKAGIN | GROSS WEIGHT | POUNDS |
|--|---------------------------------------|------------------|
| Experimental work in Laboratory on devices listed herein over period January 51st 1918 to March 51st 1918 at cost. | | |
| <u>Laboratory</u> <u>Order No.</u> | <u>Description.</u> | |
| 5005 | Submarine Detector | 3,659.19 |
| 5013 | Photograph Range Finder | 1,304.69 |
| 5037 | Shell Trajectory | 81.06 |
| 5045 | Gun Protection | 3.43 |
| 5090 | Submarine Hydrogen Detector | 618.47 |
| 5183 | Aeroplano Detection | 1,150.09 |
| 5171 | Nitrogen Fixation | 4.95 |
| 5452 | Invisibility of Freighters | 40.02 |
| 5593 | Anthracite Coal Test | .74 |
| 5632 | Smoke Shells | 929.98 |
| 5699 | Submarine Strategy Experiments | 3,040.62 |
| 5765 | Finely-divided form of trinitrotoluol | .32 |
| | | <u>11,012.78</u> |

I certify that the above bill is true and correct.

WAR DEPARTMENT,
WASHINGTON,

44-71

Mem

April 29th, 1916.

R.R. 661.5 Exp. R.2.

Mr. Thomas A. Edison,
ORANGE, NEW JERSEY.

Dear Mr. Edison:

The Chief of Engineers of the United States Army is very much interested in the experimental work which you are conducting on the destruction of wire entanglements.

He has requested permission to have an officer of Engineers detailed for duty at your laboratory, in connection with this experimental work, in order that the Corps of Engineers may benefit from the results accomplished.

Inasmuch as the cost of this work is being paid from appropriations of the Corps of Engineers, it would seem that this request is a proper one.

I, therefore, ask that you advise the Chief of Engineers whether or not this arrangement would be agreeable to you.

Very respectfully,

General Palmer
Secretary of War.

My

May 6, 1918.

Hon. Newton D. Baker,
Secretary of War,
Washington, D. C.

My dear Mr. Baker:

I have just received your favor of the 29th ultimo, concerning the detailing of an officer of Engineers to observe the experimental work on the destruction of wire entanglements.

I entirely agree with you as to the desirability of this action, but will suggest that you defer the same for a short time, in accordance with the following explanation.

My men are conducting these experiments on a lonely island off the Florida coast. Great care has been exercised to preserve secrecy and to guard the idea so that the principle should not leak out, as the enemy would quickly avail himself of it and turn the tables on us.

The experiments have proven very satisfactory and some motion pictures have been made. I expect my men to return to my laboratory here in about two weeks, and the plan I have in mind is to go down to Washington to see you when they return, and at the same time show you the motion pictures in some quiet room in your building.

In the meantime, I am having a search made for a secluded place in the mountains up here where the experiments may be continued and enlarged when my men return with their apparatus.

Let me suggest, therefore, that you defer detailing an officer of the Engineers in connection with these experiments until they are resumed as above stated.

Yours very truly,

June 3, 1918.

Mr. Kellow:

Will you please open a new shop order on account of Mr. Edison's experiments for the War Department. The title of this will be "Protective Steel".

Herewith I hand you a memorandum of expenses of a trip which Mr. Edison made to Pittston, Pa., with Theodore Edison, Mr. Hanford and Simpson. This amounts to \$39.75 and you can credit it against the \$100 which you gave Mr. Edison last Friday.

When you have number for the new shop order for Protective Steel", will you please give it to Mr. Brady, as he went out one day last week and bought a lot of Steel for Mr. Edison, and is waiting for the Shop Order Number so that he can have a Purchase Order issued by the Purchasing Department.

W.H.MEADOWCROFT.

(H.H.)

Laboratory
S.O. 600
Rest
Army Dept
Mr. Edison's
Shop order on expenses
account for \$39.75 submitted
6/3/18 - Part of "Protective
Steel" - RWD

THOMAS A. EDISON

WHEN REFERRING TO THIS BILL
MENTION THIS NUMBER

THOMAS A. EDISON
ORANGE, N. J.
Laboratory.

12

SOLD TO

United States Government,
Navy Department,
Washington, D. C.

TERMS:

NOTICE

Please do not alter the figures
on this bill. If any errors or
differences exist, kindly return
it to us so we may issue a new bill
corrective of mistakes.
We are responsible for delivery or
safe carriage of goods. They
are not responsible for damage
in transit or damage
made claim on carrier who has
received the goods after this
order.
Bill direct to Orange, N. J.,
Officer. No officer has authority
to collect our accounts.

YOUR ORDER NO.

SHIPPED

TO

OUR ORDER NO.

VIA

SHIPPING NO.

June 17th 1918.

| CANVAS PACKAGING | Q | GROSS WEIGHT | POUNDS | |
|---|---|--------------------------------|-----------|--|
| Experimental work in Laboratory on devices listed herein over period March 31st 1918, to June 17th 1918, at cost, | | | | |
| Laboratory Order No. | | Description. | | |
| 5008 | | Submarine Detector | 8,322.81 | |
| 5018 | | Phonograph Range Finder | 2,552.81 | |
| 5037 | | Shell Trajectory | .79 | |
| 5045 | | Gum Protection | .78 | |
| 5090 | | Submarine Hydrogen Detector | .08 | |
| 5092 | | Submarine Light | .08 | |
| 5094 | | Trench Material | 804.84 | |
| 5153 | | Aeroplane Detection | 379.91 | |
| 5452 | | Invisibility of Freighters | 708.01 | |
| 5632 | | Smoke Shells | 2,857.66 | |
| 5699 | | Submarine Strategy Experiments | 15,491.03 | |

I certify that the above is true and correct.

WHEN REFERRING TO THEM CALL
MENTION THIS NUMBER:

THOMAS A. EDISON

TRADE MARK
Thomas C. Edison

SOLD TO

United States Government.

Army Department.

THEORY

Washington, D. C.

Your Order No.

Page Number

BUFFING NO.

VIA

<http://www.elsevier.com/locate/jtbi>

| CASE PACKAGEN | GROSS WEIGHT | POUNDS | DATE REC'D. |
|---|--|----------|-------------|
| Experimental work in Laboratory on devices listed herein over period March 31st 1918, to June 17th 1918, at cost. | | | |
| Laboratory Order No. 5746 | Description Destruction of Wire Entanglements | 2,674.51 | |
| | | | |
| I certify that the above is true and correct. | | | |

I certify that the above is true and correct.

P

July 5, 1918.

Priorities Committee,
Washington, D.C.

Gentlemen:

Possibly you may be aware of the fact that for the last eighteen months I have been conducting a series of experiments for our Government at the request of the Secretary of the Navy.

In carrying out these experiments I have used all the resources of my laboratory, including the two machine shops which form part thereof. This experimental work would be much facilitated if I could obtain without delay some additional equipment in the line of machinery, but in shopping around to purchase same the best promise of delivery I can get is from four to nine months.

The blank applications for priority furnished by your Committee do not provide for a case of this kind, as they are intended to cover cases where the applicant is manufacturing specific articles for the Government on a commercial basis. While my work is for the Government it is of an experimental nature and cannot be described as called for on your experimental blanks, it is such that the benefit of a priority order might very well be extended.

The following is a list of the equipment I desire:

From Brown & Sharpe Manufacturing Co., Providence, R. I.
1 - #3 Brown and Sharpe Cutter and Reamer Grinder,
1 - #2 Surface Grinder,
1 - Magnetic Chuck,
1 - Universal Grinder,

From the Hendy Machine Co., Torrington, Conn.

1 - 14" x 6" Engine Lathe,
1 set of chucks - 1/8 to 5/8".
1 - Hendy filing machine

I trust your Committee may see its way clear to issue the necessary priority orders in these circumstances.

Hospitably yours,

4
1pm
Address reply to
CHIEF SIGNAL OFFICER OF THE ARMY,
Washington, D.C.

Engineering
Insignia
Radio Development Dept.

IND: G. A. M. C. W. W. B.

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
WASHINGTON.

July 30, 1918.

From: Office of the Chief Signal Officer.

To: Mr. Thomas A. Edison, Orange, N. J.

Subject: Improvements in Signalling.

1. Please accept the thanks of the Radio Development Department for the suggestions given Captain Flowers in your conference on July 24th in regard to various improvements in signalling, which have been brought to the attention of officers especially interested in them.

2. You may expect that further communications will be addressed to you later when it has been decided how to actively follow up any of the proposed developments.

By direction of the Chief Signal Officer of the Army.

J. O. MAUBORGNE
Major, Signal Corps.

CAC.

1994-01-01

THOMAS A. EDISON

ORANGE, N. J.
Laboratory.

I TRADE MARK
Thomas A. Edison

SOLD TO

United States Government.

Army Department.

Washington, D. C.

Темы

Your Order No.

卷之三

Shipping No.

9

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114

10

WHEN REFERRING TO THIS BILL,
MENTION THIS NUMBER:

13

NOTICE

Please do not alter the figures on the bill. If any errors or differences exist, kindly return the corrected one so as to avoid trouble.

We do not insure delivery or safe carriage of goods. These are at your risk after shipment from our factory.

In case of loss or damage, make claim on carrier, who has accepted for goods in first class.

Send direct to Orange, N.J., Office.

No salesman have authority to collect our accounts.

July 21st 1918.

100-10000

THOMAS A. EDISON
ORANGE, N. J.
Laboratory.

I *Thomas A. Edison*

WHEN REFERRING TO THIS BILL,
MENTION THIS NUMBER:

130

SOLD TO
United States Government,
Navy Department,
Washington, D. C.

TERMS:

NOTICE

Please do not alter the figures on this bill. If any errors or differences exist, kindly return it to our office, so we will have confirmation of accuracy.

We guarantee safe delivery or safe carriage of goods. They are shipped by express or otherwise from our factory.

In case of loss or damage, make claim on carrier who has received your goods intact and undamaged.

Remit direct to Orange, N. J.

No attorney has authority

to additonal charge or expense.

July 31st, 1918.

| YOUR ORDER NO. | SHIPPED | TO | VIA |
|----------------|---------|----|-----|
| OUR ORDER NO. | | | |
| SHIPPING NO. | | | |

CARTH
PACKAGIN

GROSS WEIGHT

POUNDS

<input type="

400.11 Invention.

1482.7

Attn: to
CHIEF SIGNAL OFFICER OF THE ARMY,
Washington, D.C.
ENG. & RESEARCH DIVISION
Elec. Eng. Dept.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER,
WASHINGTON.

August 5, 1918.

From: Office, Chief Signal Officer.

To: Mr. Thomas A. Edison, Orange, N. J.

Subject: Quick Restoration of Wire Connection Destroyed by
Gun Fire.

1. In connection with your question in the conference of July 24, 1918, relative to the development of a gun for the quick restoration of wire connections, you are advised that the matter has been taken up with the Chief Signal Officer, of the American Expeditionary Forces, and as soon as his reply is received you will be further communicated with on this subject.

By direction of the Chief Signal Officer.

D. M. Edwards
Major, Sig. R. C.

I read in the last report of the Army Intelligence Division that lately the Germans are using this idea & they give date. I am anxious you detail couple men for 2 or 3 days to make an experiment at laboratory here

whence fall lines are shot
away we can still work
them & I am going away on
the 15th & will be absent
2 weeks, would like to try it
before I leave, should want

Say 10000 ft of field

~~the~~ wire for laying on
ground - & have the
apparatus

Myron has already perfected device

whereby 2000 ft of $\frac{3}{16}$ field wire can
be laid in 30 to 40 seconds when shot

a. Aiding research
b. Giving pictures
c. Action

W

To: Mr. T. A. Edison
Mr. H. H. Nalland

August 6, 1918.

Dear Sir:

In connection with our experiments at Sandy Hook, it appears to be necessary to provide the commanding officer, Major Kirk, with authority to charge certain expenses that may be incurred to this particular work. So far no expenses have been incurred by the Ordnance Department at Sandy Hook, but it is quite likely that various charges will have to be made from time to time, and it is difficult for them at the present time to know how to handle them.

Major Kirk states that when they have had experiments to do for the Navy Department, certain appropriations were made which were available to him and could be used on authorization of the Navy representative on the test. Would it be possible to have Washington assign a certain credit to this work, say \$500, which would be used on such jobs that would have our approval, so that there may be no delay due to possible lack of authority on Major Kirk's part to assist us at any time in our work?

We are arranging with the Telephone Company to install the poles and will do most of the work ourselves that we now have in view, but there are certain incidental expenses that the Ordnance Department may be put to that will have to be taken care of.

The amount stated above is probably in excess of any of our requirements, but the amount of credit left over after the experiment is finished can be returned to the general fund.

H. H. Nalland
Yours truly,

NHH/JED

August, 7, 1918.

From: Thomas A. Edison, Orange, N.J.
To: Major L.M. Evans, S.A.C., Office of
Chief Signal Officer, Washington, D.C.
Subject: Quick Restoration of Wire Connection
Destroyed by Gun Fire.
Reference: Your 400.11. Invention.

1. I have received your favor of the 5th instant on the above subject. I have read in the last report of the Army Intelligence Division that lately the Germans are using this idea and they give date.

2. I am anxious that you detail a few men here for two or three days to make an experiment at the laboratory here, whereby if all lines are shot away we can still work them.

3. I am going away on the 18th of August and will be absent for about two weeks, so I would like to try it before I leave.

4. In this experiment, I should want, say, 10,000 feet of field wire for laying on the ground. I have the apparatus.

5. My son has already perfected devices whereby 2,000 feet of 3/16 field wire can be laid in 30 to 40 seconds. We can show your representative a moving picture of this device in action.

CHARGE TO U. S. G. GOVERNMENT RATE.
Government paid

JUL 10

WAR DEPARTMENT TELEGRAM.

OFFICIAL BUSINESS.

WASHINGTON. August 9, 1918

Thomas A. Edison,

Orange, New Jersey.

Reference letter seventh Sergeant Morris two other enlisted
men to report your laboratory Orange a. m. August twelfth *Monday*
bringing two miles field wire.

Squier

per Lt. Col. J. G. Hamburger, S.O.

This is just a
confirmation of what
I told you last night.
W. D. Squier
Post No. 14
8/19/18



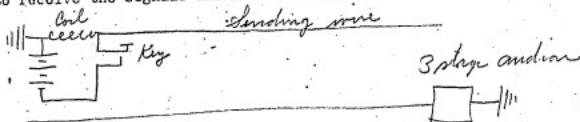
August 16, 1918.

Lieut. Col. J. O. Hauborgne, S.C.,
Office of Chief Signal Officer,
War Department,
Washington, D. C.

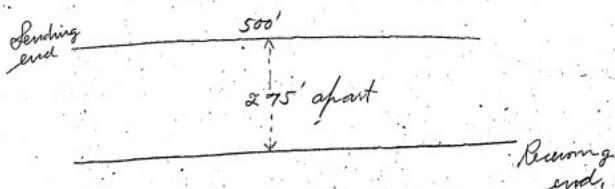
Dear Sir:-

The following experiments were made at Orange, N.J., to determine the feasibility of maintaining communication over field wires broken by shell fire.

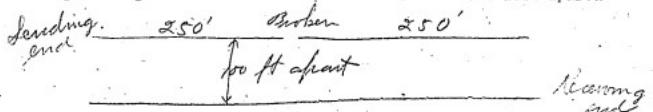
Two wires each 500 feet long were laid along the ground parallel to each other. An induction coil or a single winding inductance coil were used to send high voltage impulses over one wire and a three stage audion and telephone receiver were used to receive the signals induced in the other wire:



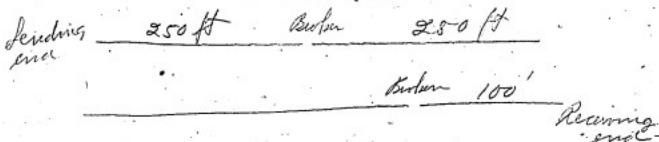
- With both wires unbroken signals could be heard with the wires 275 feet apart:



2. With the bonding wire broken at the middle point signal could be detected with the wires 100 feet apart.



3. With the wires broken as shown below, signals were detected with the wires 5' apart:



By holding the wires up every 50' on 3 foot stakes, little improvement was noticed:



In my experiments a number of years ago I used wires located high up on poles and much better results were obtained. It appears that the proximity of the wires to the earth concentrates the electric field close to the wire and prevents its effect being felt at a great distance. With wet grounds or in rain the distance to which signals could be sent were somewhat less than noted above.

If it is desired, I will continue the experiments and try to improve upon the results of these tests.

Yours very truly,

In reply refer to 311.5 Signal

Addressee to

CHIEF SIGNAL OFFICER OF THE ARMY,

Washington, D. C.

Engineering and Division
Research
HAF:ho

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
WASHINGTON.

30, August 1918

From: Office, Chief Signal Officer

To: Mr Thomas A. Edison, Orange, N.J.

Subject: Signaling by means of Ground Rod.

file

1. As discussed in conference with Major Charles A. Culver, 24, July, it does not appear that the method of signaling in discussion, viz., that of signaling by tapping with a hammer on a rod driven into the ground, presents any advantage over the various methods of signaling at present employed, such as secret light signaling, etc.

2. It is also thought that it would be just as easy for the enemy to pick up the signals as it would be for our own force, since the enemy is also supplied with suitable amplifiers.

3. It is not considered practicable to develop this method of signaling at the present time, although it will be kept in the minds of the Signal Corps engineers should occasion arise in which it could be used to advantage.

By direction of the Chief Signal Officer.

J. G. Mauborgne
J. G. Mauborgne,
Lt. Col. Signal Corps. 7

WHEN REFERRING TO THIS BILL,
MENTION THIS NUMBER:

116

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY

SOLD TO

United States Government,
 Army Department,
 Washington, D. C.

September 30/18

TERMS:

YOUR ORDER NO.

OUR ORDER NO.

SHIPPING NO.

SHIPPED**TO**

VIA

| CANIS PACKAGIN | <input type="checkbox"/> | GROSS WEIGHT | POUNDS | |
|--|--------------------------|---|------------|------------|
| Experimental work in Laboratory on devices listed herein over period July 31st, 1918, to September 30th, 1918, at cost: | | | | |
| Laboratory Order No. | | Description | | |
| 5746 | | Destruction of Wire Entanglements | \$4,336.00 | |
| 600-9 | | Field Communication under Small-fire Conditions | 4.24 | |
| 600-10 | | Plating Searchlight Reflectors | .27 | \$4,342.51 |

NOTICE

Please do not alter the figures on the bill. If any errors or discrepancies occur, we are to be held responsible, as are to be held companies of contractors.

We are responsible for delivery or safe storage of goods. They are at present in our laboratory form our point of view. In case of loss or damage, make claim on carrier who has received the goods in the first place.

Send direct to Orange, N.J., Office.

No salesman have authority to collect our account.

I certify that the above bill is true and correct:

0000-0000 000

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY

 TRADE NAME
Thomas A. Edison

SOLD TO

September 30, 1918.

United States Government,
Navy Department,
Washington, D. C.

10018

Your Order No.
Our Order No.
Shipping No.

SHIPPED **TO**
VIA

| CABIN PACKAGES | GROSS WEIGHT | POUNDS |
|-------------------------|-----------------------------------|-------------|
| Laboratory Order No. | Description | |
| 5005 | Submarine Detector | \$5,478.22 |
| 5013 | Phonograph Range Finder | 1,643.95 |
| 5037 | Shell Trajectory | 139.01 |
| 5090 | Submarine Hydrogen Detector | 104.09 |
| 5153 | Aeroplane Detection | 516.70 |
| 5452 | Invisibility of Freighters | 42.37 |
| 5632 | Smoke Shells | 877.22 |
| 5699 | Submarine Strategy Experiments | 1,226.11 |
| 600-8 | Special Works by Mr. B. H. Silver | 10.00 |
| | | \$10,037.67 |

WHEN REFERRING TO THIS BILL
MENTION THIS NUMBER:

114

NOTICE

Please do not alter the figures on the bill. If any errors or differences exist, kindly return the same to us as to avoid confusion of accounts.
We do not insure delivery or safe carriage of goods. They are at your risk after shipment from our factory.
In case of loss or damage, make claim on carrier who has transported for goods in first class order.
Remit direct to Orange, N.J. Office.
No salesman have authority to collect our accounts.

600.11 Inventions, Wire Throwing

Address reply to
CHIEF SIGNAL OFFICER OF THE ARMY,
Washington, D. C.
Engineering Division
and Research
JCM:ho

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER,
WASHINGTON.
4, October 1918

From: Office, Chief Signal Officer

To: Mr Thomas A. Edison, Orange, N. J.

Subject: Restoration of wire destroyed by shell fire.

1. Reference your communication of early August, subject, "Quick Restoration of wire connexion, destroyed by gun fire," in which you suggest the use of the Lyle gun, information has just been received from the Chief Signal Officer, American Expeditionary Forces to the effect that there is no real need for a device of this sort.

By direction of the Acting Chief Signal Officer.

J. O. Mauborgne
J. O. Mauborgne,
Lt. Col., Signal Corps.

100-1000

WHEN REFERRING TO THIS BILL,
MENTION THIS NUMBER*Thomas A. Edison*

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY.

SOLD TO

United States Government,
 Army Department,
 Thomas Washington, D. C.

109

NOTICE

Please do not alter the figures
 on the bill. If any errors or
 differences exist, have it return
 for correction, so as to avoid
 conclusion of account.
 You are responsible for delivery or
 safe carriage of goods. They
 are packed and shipped at your
 risk and expense.
 Loss, damage, or damage
 make claim on carrier who has
 received your goods in first class
 order.
 Payable direct to Orange, N. J.,
 Office.
 No salesman have authority
 to collect our accounts.

YOUR ORDER NO.
 OUR ORDER NO.
 SHIPPING NO.

SHIPPED **TO**
 VIA

November 30, 1918.

| CANDE PACKAGIN | GROSS WEIGHT | POUNDS | |
|---|--|------------|----------|
| Experimental work in laboratory on devices listed herein over period of September 30, to November 30, 1918, at cost | | | |
| Laboratory | | | |
| Order No. | Description | | |
| 5746 | Destruction of Wire Entanglements | 2,929.18 - | |
| 600-9 | Field Communication under Shell-fire Conditions | 3 .50 - | |
| 600-10 | Silver and Copper-plating Searchlight Reflectors | 169 .75 - | |
| 600-11 | Automatic Star Gauge for Ordnance Department | 68 .61 - | 3,171.04 |

I certify that the above bill is true and correct.

*Franklin C. Dyer
Laboratory Manager*

THOMAS A. EDISON

Thomas A. Edison

WHEN REFERRING TO THIS BILL,
MENTION THIS NUMBER:

110

THOMAS A. EDISON
ORANGE, N. J.
LABORATORY

Thomas A. Edison

SOLD TO
United States Government,

Navy Department,

TERMS:

Washington, D. C.

NOTICE

Please do not alter the figures
on this bill. If any errors or
differences exist, please
correction, so as to avoid
confusion.

We do not insure delivery or
safe arrival. We are not responsible
for your risk after shipment.

In case of loss or damage,
send us the bill of lading and
receipted for goods in first class
mail.

Remit direct to Orange, N. J.

C. O. D.

No salesman have authority

to collect our accounts.

YOUR ORDER NO.

OUR ORDER NO.

SHIPPING NO.

SHIPPED

TO

VIA

November 30, 1918.

CANVAS

PACKAGING

GROSS WEIGHT

POUNDS

Experimental work in Laboratory on devices listed
herein over period September 30, 1918, to November
30, 1918, at cost:

| Laboratory Order No. | Description. | | |
|-------------------------|--------------------------------|-----------|-----------|
| 5005 | Submarine Detector | 7,440.91- | |
| 5012 | Photograph Range Finder | 2,106.49- | |
| 5037 | Shell Trajectory | 34.71- | |
| 5090 | Submarine Hydrogen Detector | 29.50- | |
| 5153 | Submarine Hydrogen Detector | 4.51- | |
| 5452 | Aeroplane Detection | 411.43- | |
| 5632 | Invisibility of Fighters | 509.50- | |
| 5699 | Smoke Shells | 1,896.40- | 12,433.45 |
| | Submarine Strategy Experiments | | |

I certify that the above bill is true and correct.

J. W. Edwards

Secretarial Service Department

THOMAS A. EDISON, PERSONAL

Function: Laboratory.
SUBJECT: Edison Personal X Orders.

Memorandum No. _____
Date December 13, 1918.

Mr. Thomas A. Edison:

Attached are bills against United States Government dated November 30, 1918 for your signature and forwarding to Washington for payment as follows:

| | |
|-----------------|-------------------|
| Navy Department | \$12,433.45 |
| Army Department | <u>3,171.04</u> |
| | Total \$15,604.49 |

This includes all charges up to and including November 30, 1918.

Attached is a Statement of Cost of the various orders on which you have worked for the Government, showing cost to November 30 of each and the total cost at November 30, amounting to \$223,203.22, which I think will interest you.

Only five orders have been charged to the Army Department being Numbers 5746, 600-7, 600-9, 600-10, 600-11. The total charges to Army and Navy are as follows:

| | |
|--------------------|--------------------|
| To Army Department | \$26,446.06 |
| To Navy Department | <u>196,757.15</u> |
| | Total \$223,203.22 |

These figures represent the cost as billed to the Government. I am by no means sure that charges for labor and material have been properly allocated to the orders shown by engineers and others who were engaged on this work. The work progressed rapidly and numerous orders were in process at all times, so that it would be surprising if mistakes were not made in allocating charges. Furthermore, the work was of an extremely confidential nature and it was thought best by you to confine knowledge of the work you were doing strictly to yourself and engineers or others who performed the work. For this reason, the persons in the laboratory whose duty it is to supervise such matters did not exercise any supervision over these orders. You may recall that I mentioned the circumstances to you soon after the work started and you agreed that we should simply have to do the best possible in allocating charges properly under the conditions governing the work.

Also, I imagine that while you and your staff were absent in the South and elsewhere in connection with these orders many more experiments were conducted than are mentioned in this list of orders, for which no new orders were opened, the cost of these experiments being charged, however, to the orders listed on attached, thus making the recorded cost of these orders higher than it actually was and also in our not showing any record of these experiments on our bills to the Government.

Copies to:-

1533-3-50-10-18

Secretarial Service Department

THOMAS A. EDISON, PERSONAL

Laboratory.

Function: Edison Personal X Orders.
S U B J E C T:

Mr. Thomas A. Edison

Memorandum No. 13
December 13, 1918.
Date

-2-

I am keeping in touch with you through Mr. Meadowcroft as to the continuance of this work and have asked him to notify me immediately when work is discontinued on any or all of the orders, so that we can keep a watch on charges which are coming to us.

I have kept this record of orders carefully filed away in a good, safe place and if you wish will file away the list I am sending you herewith in the same place if you think it important to do so and return it to me.

R. W. Kellow,

RWK:PS
Att.

Secretary.

Copies to:-

1533-3-50-10-18

[ATTACHMENT/ENCLOSURE]

LABORATORY OF THOMAS A. EDISON

—000000—

Cost of Experimental Work by Mr. Edison and Staff for the
United States Government as Billed to the Army and Navy De-
partments from March, 1917, to November 30th, 1918, inclusive.

| Laboratory Order No. | Description | Amount |
|----------------------|------------------------------|------------|
| 5006 | Submarine Detector | 496,635.40 |
| 5009 | Chalk Telephone | 613.44 |
| 5010 | Submarine Fuze | 1,916.60 |
| 5011 | DeForrest Wireless | 3,778.88 |
| 5012 | Photography | 151.47 |
| 5013 | Phonograph Range Finder | 18,801.12 |
| 5014 | Telescope | 497.72 |
| 5016 | Visibility | 4,669.89 |
| 5037 | Shell Trajectory | 5,020.33 |
| 5044 | Microphone | 8,484.31 |
| 5045 | Gun Protection | 334.70 |
| 5047 | Fire Extinguishing Apparatus | 290.08 |
| 5049 | Battle Ship Fire Protection | 668.61 |
| 5058 | Torpedo Motive Power | 127.66 |
| 5062 | Extension Mast | 1,151.52 |
| 5090 | Submarine Hydrogen Detector | 5,805.69 |
| 5092 | Submarine Light | 126.44 |
| 5094 | Trench Material | 63.73 |
| 5107 | Trench Fire | 72.37 |
| 5133 | Visual Signalling | 381.93 |
| 5145 | Submarine Gun | 55.29 |
| 5147 | Visual Range Finder | 614.25 |
| 5153 | Aeroplane Detection | 4,931.79 |
| 5181 | Nitrogen Fixation | 1,379.06 |
| 5181 | Muzzle | 217.35 |

[ATTACHMENT/ENCLOSURE]

-2-

| | | |
|--------|--|---------------------|
| 5211 | Fresh Water from Sea Water for Buoys | \$134.37 |
| 5234 | Signal Light Shutter | 29.43 |
| 5245 | Aeroplane Bomb Thrower | 873.94 |
| 5251 | Speed-of-distanceship Indicator | 264.51 |
| 5273 | Periscope Sighting | 1,485.00 |
| 5291 | Slow-burning Powders | 276.97 |
| 5292 | Ship Protection against Torpedoes | 167.58 |
| 5450 | Aeroplane Construction | 109.67 |
| 5452 | Invisibility of Freighters | 12,913.91 |
| 5454 | Telehood (A device for observation on the water; a shield for the eyes) | 105.03 |
| 5536 | Underwater Explosions | 183.69 |
| 5575 | Color Interference on Painted Ships | 296.27 |
| 5583 | Anthracite Coal Test | 1,444.35 |
| 5632 | Smoke Shells | 4,988.98 |
| 5659 | Submarine Strategy Experiments | 15,448.84 |
| 5746 | Destruction of Wire Entanglements | 26,153.18 |
| 5765 | Finely-divided Form of Trinitrotoluol | 149136 |
| 600-6 | Location of Laboratory | 37.21 |
| 600-7 | Protective Steel | 46.51 |
| 600-8 | Experiments with Dr. Schole-Mr. Silver | 801.37 |
| 600-9 | Field Communication under Shell-fire Conditions | 7.74 |
| 600-10 | Silver and Copper-plating Searchlight Reflectors | 170.02 |
| 600-11 | Automatic Star Gauge for Ordnance Dept. | 68.61 |
| | TOTAL | <u>\$223,203.22</u> |

**Naval Consulting Board and Related Wartime Research Papers
Subjects – Jones Point Experimental Laboratory (1918)**

This folder contains correspondence relating to war research conducted at an experimental laboratory of the American Potash Corp. at Jones Point on the lower Hudson River. In addition to Edison and his assistant, William H. Meadowcroft, the main correspondent is Richmond Levering of the U.S. Bureau of Investigation. Included are items dealing with Edison's ideas for measuring the height of seaplanes over water and with the compensation of employee Bruce R. Silver, who was working with Walter T. Scheele at Jones Point on incendiary devices. One report by Silver has been selected as a representative sample.

Approximately 10 percent of the documents have been selected. The items not selected include additional reports by Silver and by Capt. Paul Brinton of the U.S. Army Ordnance Corps, which were sent to Edison by Levering.

Confidential

I suggested to Hydroplane Commander
use of a double wire cord with lead ball
Department of Justice, 6 ft from end to be excited
Bureau of Investigation by hydroplane - The two ends of
wire coming in contact
New York, N.Y.
June 14th, 1918.

Mr. Wm. H. Meadowcroft,
c/o Thos. A. Edison,
Orange, N. J.

Dear Sir:

I have received your letter of June 13th, and have already written to Washington asking the Department of Justice to make the request which you advise we should make from Secretary Daniels in connection with Mr. Silver's compensation.

I enclose herewith for Mr. Edison's information, copies of the reports of Mr. Silver; of Captain Brinton representing Lt. Col. Ragsdale, Army Ordnance, and Lt. Grimes representing Lt. Commander Wilkinson, Navy Ordnance on their work done at Jones Point.

We will from this time on send you regularly from this office, the semi-weekly reports and any special reports which are made.

It might interest you to know that Jones Point has now received an order from Army Ordnance to produce 5,000 incendiary darts, and from the Navy to fill the first shipment of twelve of the Mark IV bombs with incendiary material.

Col. Ragsdale has also informed us that he plans to use "Hellfire" in the trench mortars and flares as well as in the incendiary bombs and darts.

There is a problem on which we are now working and on which we would very much appreciate Mr. Edison's assistance, as it relates to a form of indicator that will show when contact with the water is established, by means of some wire leading to an aeroplane to be trailed below the plane, in connection with a new depth charge bomb. The details of this problem, if Mr. Edison would like to assist us in the matter, could best be taken up in person.

In order to avoid reading through the whole mass of reports, unless desired; the report of Captain Brinton, dated May 21st, gives the most connected story of the work, and contains the following comment on "Scheeleite" which has now

Mr. Wm. M. Meadowcroft.

-2-

been renamed "Helline":

"It is believed that all who saw these two tests agreed that they were the most remarkable incendiary effects ever witnessed, and the efficacy of the combination of the Scheelite and crude oil seems established beyond doubt."

It might interest you to know that after trying dozens of materials, it was Mr. Silver's suggestion that incorporated the use of oil and paraffine in certain quantities which made the incendiary material controllable as to time, and produced the very exceptional result which is described in the above quotation from Captain Brinton, and also stabilized the material against danger from premature ignition by rifle bullets.

I remain,

Very sincerely yours,

For the Department
of Justice.

RL/B.

ADDED IN PEN BY MR. MEADOWCROFT:
P.S. I see by the reports that they are experimenting with Liquid Air. I have had a little experience with it. You might advise the experimenters that a bunch of oily waste, well saturated with Liquid Air and confined in a piece of iron pipe, will explode violently. Perhaps they know this already.

June 18, 1918.

Mr. Richmond Levering,
Bureau of Investigation,
Department of Justice,
120 Broadway,
New York, N.Y.

Dear Sir:-

I received your confidential letter of the 14th instant, with the copies of the reports therein mentioned, and have shown the same to Mr. Edison.

He will be very glad to be of assistance to your Department in the matter that you mention and wishes me to tell you that he will be glad to see you or any other person detailed for the work at any time. I would suggest, however, that before coming out here you telephone me (Orange 907) to see if he is available. He is called away from the Laboratory occasionally in carrying out his experiments for the Government.

Mr. Edison also wishes me to say that he suggested to the Commander of the Hydroplane Corps the use of a double wire cord having a lead ball attached six feet from the end, to be carried by a hydroplane. The two ends of wire coming in contact with the salt water would close the circuit of a vibrating bell. The Hydroplane Corps desired such an indicator to tell how far they were above the sea when about to land, as it seems difficult to judge of their height from the water. At the time this suggestion was offered by Mr. Edison, two hydroplanes had been almost wrecked through misjudging their height above the water.

Yours very truly:

Assistant to Mr. Edison.

A/5317.

Department of Justice,
Bureau of Investigation.

New York, N.Y.

June 19th, 1918.

Mr. Wm. H. Meadowcroft,
Assistant to Mr. Thos. A. Edison,
Orange, N. J.

Dear Sir:

I have received your letter of June 18th,
and will try and arrange an appointment by telephone,
to see Mr. Edison Thursday or Friday.

In carrying out the experiments to get an
accurate gauge on the height of the hydroplane above
water, I have found it impossible in practice to use
a wire such as you describe, and doubt if we can carry
a lead ball as suggested. We have tested every size
of wire down to almost hair size, and find that the
friction of the water make the wire jump ahead, and it
tangles itself. There is a constant jerking motion
even in the smoothest water. In the apparatus, on
which I am working, I use a 35 gauge steel drill stem,
and could of course, substitute copper or brass. This
rod also jumps on the water, but does not travel for-
ward and tangle.

I hope to get Mr. Edison's suggestion on
some ratchet device at the upper end of the rod, or
something similar to the ratchet switch on an electric
bulb which will alternately make and break a circuit
every time the tip of the rod touches the water. The
action of even this light steel rod is very violent at
a speed of 75 miles an hour or over.

I have noted your comment concerning the mixture
of liquid air with oily waste, to be used explosively.
This is one of the combinations on which we are working,
and is, I believe, the one found most satisfactory in
blasting work. We are also using charcoal and other
mixtures of similar nature.

I believe it would be a very excellent idea for

Mr. Wm. H. Meadowcroft. -2-

Mr. Silver and you to get together on these experiments,
as the Navy Ordnance are sending us all the information
they can gather from the French Government and others,
on which to concentrate experiments at Jones Point.

Yours very truly,

Alphonse Leroy
For the Department
of Justice.

RL/B.

Department of Justice,
Bureau of Investigation.

New York, N.Y.

June 21st, 1916.

Mr. Wm. H. Meadowcroft,
c/o Thos. A. Edison,
Orange, N.J.

Dear Sir:

I enclose herewith, for your information, copy of letter which I have to-day received from Mr. Bielaski, Chief of the Bureau of Investigation, Department of Justice, concerning compensation of Mr. Bruce R. Silver.

Yours very truly,
Richard Levering
For the Department
of Justice.

[ATTACHMENT/ENCLOSURE]

Department of Justice.
Bureau of Investigation

June 18th, 1918.

W.M.O.

Richmond Levering, Esq.,
120 Broadway,
New York City.

Dear Mr. Levering:

In reply to your letter of the 14th inst.,
I beg to advise you that the Secretary of the Navy
has been requested to authorize the payment of
Mr. Bruce R. Silver by Thos. A. Edison, as hereto-
fore.

You will be informed of the result of this
request.

Very truly yours,

(Signed) A.B. Bielaski.

Chief.

Department of Justice,
Bureau of Investigation.

120 Broadway,
New York City.

July 16, 1918.

Mr. Thomas A. Edison,
Orange,
New Jersey.

My dear Mr. Edison:-

I am enclosing herewith
report of progress in the Jones Point
Experimental Laboratory for the period
July 4 - 14, 1918.

Yours very truly,
Richard L. Smith
For the Department
of Justice.

RL/H

ENCLOSURE

[ATTACHMENT/ENCLOSURE]

file

From: Bruce R. Silver
To: Richmond Levering, Esq., Dep't of Justice, New York
Subject: Report of Progress in the Jones Point Experimental
Laboratory for the period July 4 - 14, 1918.

Sergeant T. A. Bulifant and L. E. Ashim of the Chemical Corps reported on Wednesday, July 10th, and have already rendered very considerable service in carrying out the tests. Their general familiarity with the methods and requirements of experiments made at the American University Experiment Station indicates that they will prove valuable assistants in the future developments at the Jones Point Laboratory.

Problem 1 - Incendiary Darts:

For the sake of definiteness, it has been decided to reduce the amount of incendiary material in the dart case to 9 inches, and work on delaying the combustion to one minute. The reduction in the amount of the charge has been made as a result of the suggestion found in Col. Ragsdale's letter of June 28th. It is understood that stabilizers are en route, so that actual tests may be carried out shortly.

It is our impression that the darts, when dropped from several thousand feet, will tend to crush near the base of the light paper tube, and miss in the ignition of the main portion of the material. We have, therefore, made up for tests a new model in the small bombs, which we hope will be somewhat more substantial and more positive in the firing device.

Problem 2 - Experiments with Liquid Oxygen:

Lieutenant Armstrong's report to the Chief of the Bureau of Ordnance of the Navy has been read with a great deal of interest. The report covered tests of "Helline" and Liquid Oxygen made on July 1 at Jones Point. There is one disappointing feature however, which we feel justified in re-opening for discussion, and that concerns the opinion that liquid oxygen is entirely out of the question as a naval explosive. There seems to be some misconception in Lieutenant Armstrong's letter to Mr. Levering under date of July 5th, which we feel should be pointed out:

Granted, that the use of liquid oxygen as a naval explosive for depth charges would require installation of a unit aboard ship, the space required for such a unit, the time element for production, and the horse-power necessary, and the difficulty of manufacture, is considerably over-estimated.

[ATTACHMENT/ENCLOSURE]

-2-

BRS - RL

Here are the facts: The space necessary for a unit on the Claude system, for the production of approx. 2.5 litres per hour of liquid oxygen is $6 \times 3 \times 11'$; the time element for production is not more than 15-30 minutes after starting up; a twenty-five R.P. motor would take care of the operation of such a plant. There is the further argument that an installation of this sort could entirely do away with existing refrigeration plants, in that the evaporating air could be used for the ice machines, and general refrigeration aboard. Under these conditions the installation would answer two purposes, and furnish in addition to the refrigeration, the beginning of an extremely powerful explosive.

On the other hand, we agree that considerable work must be done particularly in reference to the development of containers, and the determination of the safety of handling of the material. With regard to the latter point, the evidences are that the manipulation is extremely simple, with few precautions necessary. There is the further advantage that in its application to mines and depth charges, which might fail to explode at the expected time, the whole charge becomes innocuous after a lapse of an hour or so.

A repetition of tests made on July 1, together with tests of the stability of the explosive will be made today.

Problem 4 - Wing Dope for Aeroplanes

Samples of the wing dope applied to irish linen, copper and tin plates are being submitted to Naval Constructor J. C. Hunsacker of the Bureau of Construction and Repair. These samples will go forward today. All the tests have been applied with reference to the specifications for wing dope and spar varnishes. As was mentioned in the last report, the basis of the dope is Gum copal in ethylmethylketone. We have decided to give an additional protection in the way of fireproofing by giving two coats of potassium silicate in ethylmethylketone. The dope and varnish appear to answer the requirements of the specifications, particularly with reference to rapid drying. Ten minutes is sufficient for complete setting.

Problem 9 - Hexamethylene in Flares and Rockets:

Hexamethylenetetramine with sodium peroxide gives, as we have pointed out previously, a yellow flame, which is almost impossible to mask in any way with salts, so that we could expect very little in the way of development of red, white and green flares with this mixture. On the other hand hexamethylenetetramine nitrate when combined with salts offers very positive encouragement along this line, and possesses some very interesting properties:

- 1) The flame is high candle power, and burns for a long interval for a small quantity of material.

[ATTACHMENT/ENCLOSURE]

BRS - RL

-3-

2) The nitrate readily takes on the coloring of various volatile salts.

We look forward to the solution of this problem in some of the salts of hexamethylenetetramine, but at the present we are not ready to give anything definite in the way of a report.

Problem 6. Hexamethylenetetramine in Explosive mixtures:

Following up the observation of last week, that hexamethyl-enonetetramine was completely detonated in liquid oxygen, we carried out a test in a steel three-pounder for the purpose of determining the extent of detonation of the material alone, with the aid of a booster. The detonator and booster were encased in a tube 3 1/4" long, which could be inserted in the base of the shell, and made perfectly tight. With a No. 6 detonator, and 5 grams of TNT, we were able to detonate 30 grams of hexamethylenetetramine, more or less completely. The steel shell was fractured in a number of pieces. A repetition of this test will be made today.

The opportunity for the continuation of tests of varying proportions of hexa and sodium peroxide has presented itself, and we hope to be able to decide on the optimum proportions at an early date.

The preparations of and explosive tests of various compounds of hexamethylenetetramine has been continued, and will be reported on shortly.

(Signed) Bruce R. Silver.

Jones Point
New York
July fifteenth
1918

Naval Consulting Board and Related Wartime Research Papers
Subjects -- Ships and Coal (1918)

This folder contains correspondence relating to Edison's attempt to encourage reciprocal trade in Cuban sugar and Alabama coal in an effort to alleviate local shortages of both. The correspondents include W. M. Clemens, secretary of the Mobile Chamber of Commerce; George E. Crawford, acting mayor of Mobile; Albert C. Danner, president of the Mobile Coal Co.; Edward N. Hurley, chairman of the U.S. Shipping Board; Henry H. Morgan, a U.S. representative in Cuba; railroad freight agent J. S. Taylor; and officials of various shipping companies. Much of the correspondence was carried on by Charles B. Hanford, one of Edison's assistants at Key West, Florida.

Approximately 40 percent of the letters have been selected, including all documents reflecting Edison's personal role in the planning process. The unselected items include correspondence with the owners of private vessels, shipping companies, and commodity dealers, along with the numerous copies of a March 18 form letter explaining that Edison had turned over responsibility for making trade arrangements to the U.S. government. One copy of this letter, sent to the Pensacola Maritime Co., has been selected as a sample. Also unselected is correspondence pertaining to freight rates, markets, hypothetical shipping plans, and other technical matters involving Hanford but not Edison.

Carry Address
"DANNER"
(USE WESTERN UNION
UNIFORMED EDITION)
A.C. DANNER,
President.
PAUL DANNER,
Vice President.
JAS. CHANE,
Secretary.
A.R. BALL, JR., Treasurer.



MOBILE COAL COMPANY

MOBILE, ALA.

February 8, 1918.

Mr. Thos. A. Edison,
Key West, Fla.,
Dear Sir:-

In view of the inquiries made by you to the mayor here; we take the liberty of informing you that we are the principal coal handlers in Mobile, are representatives of large mining companies in the Birmingham district; and, also, this winter, owing to the demand being so great upon us, we are bringing some coal here from Illinois.

Our principal business here is supplying bunker coal to steamers, and some of the coal in Alabama has proven to be equal to any coal in the world for bunker purposes.

We tender our services to you in case we can be of any use.

Very truly,
Mobile Coal Company.

By

A handwritten signature in cursive script that reads "A.C. Danner".

President.

CITY OF MOBILE

Board of Commissioners

HARRY PILLANS
WATER WORKS, STREETS,
DOCKS AND PUBLIC WORKS

PAT J. LYONS, MAYOR-PRESIDENT
POLICE, FINANCE & PUBLIC PROPERTY
S.J.HENDRICK,
CITY CLERK

GEORGE E.CRAWFORD
FIRE, HEALTH & SANITATION

February 9th, 1918.

Hon. Thos. A. Edison,
Key West, Fla.

Dear Sir:

Replying to your telegram of yesterday, I sent you two wires, which I desire to confirm as follows:

"Yes. Alabama mines about sixteen million tons per annum of high grade coal, and quantity increasing, a good part of which comes to Mobile daily by rail and river. Demand now great. Price at mines per net ton of two thousand pounds is now from Three dollars seventy-five cents to four dollars sixty-five cents, on cars. Freight to Mobile one dollar ten cents."

"Further replying your wire this date, have ascertained much steam coal mined on navigable waters of Warrior River and one of the largest mines Debardeleben on Frisco line twelve miles from head of navigation. Latter very high grade steam coal. Present rate on said twelve miles works against use of water. Ample equipment at Mobile to handle large quantities daily by barges or rail from Warrior. Price quoted in previous telegram as three dollars seventy-five cents should read three twenty-five. Gladly furnish additional information upon request. To quote exact prices must know approximate quantity required and method of delivery."

Supplementing the above, will say that I have reliable assurances that large quantities of coal of the best grade can be furnished in Mobile as easily and with as little or less cost than at any port on the Gulf Coast.

Coal is brought here by three railroads, viz: The Southern Railway, Mobile & Ohio Railroad and Louisville & Nashville Railroad, and besides this, coal is accessible to Mobile by the rivers.

As I stated in my telegram, any further information or details will be gladly furnished you upon request, as the City and Chamber of Commerce have complete and reliable data along the lines concerning which you inquire.

Yours most respectfully,

George E. Crawford
Acting Mayor.

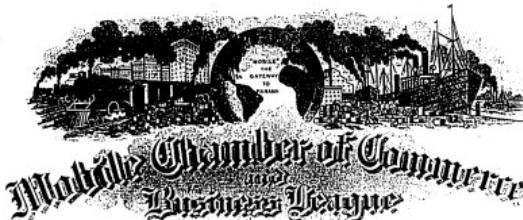
P.S.

The twelve-mile haul from the "D" mines is a rail haul to barge, for which I understand is charged a thirty-five cent rate, which, with five cents for trimming and about sixty-five cents for water carriage, brings the freight to Mobile to a parity with the rail rates, but this thirty-five cent rate should manifestly be reduced to encourage relief by barges to rail.

I enclose herewith letter just received from Secretary Clemens of the Chamber of Commerce.

Geo.E.C.

[ATTACHMENT/ENCLOSURE]



Mobile, Ala.

February
Eighth
1918

Mr. Geo. E. Crawford,
Acting Mayor,
Mobile, Ala.

Subject: COAL AT MOBILE
VIA. WARRIOR.

My Dear Mr. Crawford:-

Referring to inquiry of Mr. Thomas A. Edison, I am informed by the Pratt Consolidated Coal Company, which brings coal both by water and by rail from its mines in the Birmingham District, that all large contracts, especially for Government purposes, regular delivery could be assured.

The present Government price^s delivered to steamer at Mobile is \$7.00 per ton for foreign shipment and \$5.65 per ton for coastwise or other shipment.

The facilities of the Pratt Consolidated Coal Co., which you understand is only one of the coal companies operating here, are such that delivery of cargo coal could be made at the rate of about 250 tons per hour. Bunker coal delivery by collier while steamer is loading cargo from pier could be placed at the rate of from 100 to 150 tons per hour, according to the size of the steamer and arrangements of bunker space.

Under present conditions the cost of coal at this point would be irrespective of whether its transportation from the mine is by rail or by water. This condition, of course, does not obtain in normal times when delivery by water is very much cheaper.

There were shipped through Mobile, not including the amount that either came here for domestic use or was placed in steamers either as cargo or bunker coal, about 63,400 tons via the Warrior River. This was all high grade steam coal, suitable for bunker purposes.

As you are already obtaining from another source information as to the facilities of the Mobile Coal Company and the Zimmoen Coal Company, I will not attempt to cover that matter in this letter.



[ATTACHMENT/ENCLOSURE]

MOBILE CHAMBER OF COMMERCE

2-G.E.C.

It is of interest to compare chemical analysis and calorific value of Alabama coals with Pittsburgh and Virginia coals; Edgewater (Pratt) is unwashed lump; Lipsey and Brookwood coals are washed run of mine, Pittsburgh is unwashed run of mine, as are also New River and Pocahontas coals:

| | Edgewater | Pratt | Sipsey | Brookwood | Pitts. N. Riv. | Pocahontas |
|-----------------|-----------|-------|--------|-----------|----------------|------------|
| Moisture | | 1.62 | | 1.37 | 1.61 | 0.73 |
| Volatile matter | 28.83 | 34.12 | 36.1 | 36.1 | 27.16 | 18.10 |
| Fixed Carbon | 66.13 | 61.76 | 51.9 | 57.49 | 67.54 | 74.52 |
| Ash | 5.04 | 2.51 | 12.0 | 9.91 | 3.69 | 6.65 |
| Total | 100.00 | | 100.00 | | 100.00 | 100.00 |
| Sulphur | | 1.49 | 0.80 | 1.0 | 2.09 | 0.68 |
| B.T.U. | 14863 | | 14960 | 13000 | 13580 | 14970 |

I am enclosing for your information a telegram that I have just sent to Mr. Thos. A. Edison, urging that he come to Mobile for a personal inspection, and stating also that if a personal trip is impossible we would welcome the opportunity to supply him with full information regarding Mobile, not merely from the standpoint of fuel but also from many other standpoints, with especial relation to shipping and shipbuilding.

Any further service that we can perform in this matter, the full possibilities of which are unknown, will, I assure you, be rendered as promptly and efficiently as possible.

Yours very sincerely,

MOBILE CHAMBER OF COMMERCE,

Wm Clemens
General Secretary

WMC.K

E
JOHN M. CHENEY,
DISTRICT JUDGE.

United States District Court,
Southern District of Florida.

Original Estimate

Feb. 11, 1918

Cost of vessel = \$5000.00

Interest at 5% = 250.00

Depreciation = 500.00

Wages = 3600.00 — 3600

Rations = 1800.00

(5 men at 50 cents a day) 615.00

Total cost for 1 year 5550.00

Suppose 20 trips are made

Cost per trip --- 278.00 307.50

Pelage Mobile 6.00

Mooranna 15.00

6.50

Porterden 3.00

Cost per trip --- 24.00

Coal 80 tons at 5.90 472.00

Unloading 80 tons at 2.5 20.00

Cost per trip --- 492.00

Total cost per trip including

depreciation wages pelat

charges and coal --- 794.00

Coal 80 tons sold at 15.00 after 1200.00

Profit per trip --- 406.00

" per year

Profit = 377

Suppose 125 tons Profit = 100 6. 00
Estimate for January
the rainy one

Copy

Estimate submitted to
U. S. NAVAL STATION Capt. J. A. Ward
KEY WEST, FLA.

Schroeder "Maxie"

John Lopez agent.

Cost of vessel = 10000.00

| | |
|----------------|----------------|
| Interest at 5% | 500.00 |
| Depreciation | 1000.00 |
| Wages | 3600.00 |
| Rations | 1800.00 |
| | <u>6900.00</u> |

Suppose 20 trips are made

Cost per trip - - - - - 345.00

Pilot Mobile - - 600

Havanna - - 15.00

Postwarden - 6.50 27.80

Coal 85 tons at 5.90 501.50

Unloading 85 " " 25 cents .21.22

.522.72
895.52

Total cost for 1 trip - - - - -

85 tons coal sold at 16.00

1360.00
464.45

Profit

Copy

U. S. NAVAL STATION
KEY WEST, FLA.

Mr Edison guarantees interest, depreciation of vessel
wages and rations of crew harbor charges
and a profit of \$1.00 a ton making a total
of \$50.00 In case the vessel is delayed in
port through any failure on the part of Mr
Edison, Mr Edison promises to pay for
such delay at \$1.00 a day.

| | | |
|--------------|-------------|----------------|
| Interest | 25 | } Planned trip |
| Depreciation | 50 | |
| Wages | 180 | |
| Rations — | 90 | |
| Plots | 28 | |
| | <u>373-</u> | |

of 2 per ton profit 160
533

69.00

United States District Court,
 Southern District of Florida.

JOHN M. CHENRY,
 DISTRICT JUDGE

Fe

23/

I

C.H.Y.
Feb. 12, 1918.

CONFIDENTIAL

Mr. Geo. H. Crawford,
acting Mayor of Mobile Ala.,
Mobile, Ala.

Sir:

On account of political conditions in Cuba due to lack of food and fuel, it is very important that Cuba should receive more coal than she is now getting, otherwise our supply of raw sugar may be endangered in the future.

I have taken upon myself the chartering of several sailing vessels of approximately 100 ton capacity to make round trips from Mobile to Havana and returning, have personally guaranteed a minimum profit per ton of coal delivered. Any excess profit goes to owner of vessel, in fact, I only guarantee profitable trips and they receive all the profit. I shall do this with a number of boats to get them into the trade.

It is very important that the quality of the coal should be the best grade so the Cubans will be pleased with it and help build up a trade. I am to furnish the coal to the boats and will seal it through Mr. Morgan, U. S. Food Commissioner, at Havana. I also guarantee against any unreasonable delay in loading and unloading. I understand best grade coal at Mobile \$4.60 and \$1.10 freight, or closely thereto.

Would you please arrange that in case I can get the boats, they can be loaded promptly through a reliable dealer and one who will give the highest grade. If you can do this, I will arrange with a bank at Mobile to pay for same f.o.b. boat and I will telegraph you as soon as boats leave for Mobile.

The reason I only use small boats from 60 to 200 tons is for the reason that larger boats are scarce, whereas there seems to be plenty of the smaller ones. England, after the fishing season was over, in 1917, used these boats, 50 to 75 tons, in carrying coal across the English Channel at a part where the passage was 165 miles across. They succeeded in carrying nearly 2 million tons and not a boat was lost.

2 - Mayor, Mobile 2/12/15.

Another thing you could which would be of great value and that is to take it up with the Sugar Refining People in New Orleans and the Molasses People in Mobile, the availability of these boats for a return cargo to Mobile of Raw sugar or molasses.

If you can make these arrangements, please give me full commercial data as to freight that can be paid on sugar and molasses and the coal arrangements you can make with as little delay as possible.

Very truly yours,

[ATTACHMENT/ENCLOSURE]

GEO E. CRAWFORD
Confidential. Acting Major off Mobile Ala

The present of political conditions in Cuba
~~are due to~~ lack of food & fuel.
It is very important that Cuba should have
means with coal than she has now
otherwise our supply of raw which
may be ~~dangerous~~ in the colonies,
I have been told that I would be
of several sailing vessels of 100 tons
Capacity to make round trip from Mobile
to Havana & have ~~dangerous~~ ~~dangerous~~ ~~dangerous~~
a minimum profit per ton of coal delivered
as a base profit, it is to receive of 50 cent
in fact I only approximate profit will be
trips & other expenses will be profit
I shall do this with a number of
boats to get them into the trade -

It is very important that the quality
of the Coal should be the best grade
so the Cubans will be pleased with it
& help build up a trade,

[ATTACHMENT/ENCLOSURE]

I am to furnish the boat to the Board -
will do it through Mr. Morgan (M) good
representative at Haerstine & I also
guarantee against any unnecessary
delay in sending or returning -
I understand that you are at Melville
field or H.H. Wright, or closely thereto,

that in case you get the boat
would you please send me ~~the~~ ^{anyways} bill
~~as~~ ^{as} early as possible through a reliable
dealer & one who will give the highest
grade. If you can do this I will arrange
with a Bank at Melville to pay for
some of the boat & I will have it paid up
as soon as boats leave for Melville.

The season I entry over a small boat
seems 80 to 200 tons so for the season
that I expect boats are coming whereas
there seems to be plenty of the smaller
ones.

[ATTACHMENT/ENCLOSURE]

England, after the fishing season was
over in 1897 used ~~three~~ ^{two} boats, 56 & 75
tons in dredging Coal across the
English Channel at a point between
that Province & the 185 Miles away.
They brought up in consequence nearly
2 Million Tons & not a foot of coal
lost.

Another thing you could do which would
be of great value & that is to take
it up with the Steamer Company & ~~the~~ ^{the} 70%
~~to~~, in Malacca & the Malabar
people in Malabar, the availability
of three boats for a return cargo to Malabar
of Raw Sugar ~~&~~ ^{or} Malacca's.

If you can make these arrangements
please give me full commercial data
as to freight that can be paid on sugar to
Malabar & the local arrangement
you can make with as little delay as possible

Yours

CITY OF MOBILE Board of Commissioners

HARRY PILLANS
WATER WORKS, STREETS,
DOCKS AND PUBLIC WORKS

PAT J. LYONS, MAYOR-PRESIDENT
POLICE, FINANCE & PUBLIC PROPERTY
S.H. HENORIX,
CITY CLERK

GEORGE E. CRAWFORD
FIRE, HEALTH & SANITATION

February 15, 1918.

Hon. Thos. A. Edison,
U. S. Naval Station,
Key West, Fla.

Dear Sir:

I have yours of February 12th, and will immediately proceed to obtain the information that you desire.

I expect to confer with the Mobile Coal Company and the Chamber of Commerce in regard to the matters that you mention, and possibly they will write you direct, as I may find that it will be better for them to do so than for the information to come through me. I shall, however, ask that all this be treated as confidential by them.

Please feel free to call on me at any time for any service I can render, because it is a pleasure for me to do so.

Yours very respectfully,

George E. Crawford
Acting Mayor.

Case Address
DANNER
USE WESTERN UNION
(UNIVERSAL EDITION)
A.C. DANNER
MOBILE, ALA.



A.C. DANNER, President.
PAUL DANNER, Vice Pres.
W.S. CHANE, Secretary.
H.R. BAKER, Treasurer.

MOBILE COAL COMPANY-

MOBILE, ALA.

February 15, 1918.

CONFIDENTIAL.

Mr. Thos. A. Edison,
U. S. Naval Station,
Key West, Florida,

Dear Sir:-

Mr. George E. Crawford, Acting Mayor of Mobile, has asked me to reply to your letter under date of February 12th., in which you outline a plan of delivering coal to Cuba by the use of small sailing vessels.

I am sure that this plan can be most successfully carried out.

The time consumed in loading coal into one of these small vessels would not be more than two or three hours, and several could be loaded at the same time when necessary.

High grade coal in amount up to 1,500 or 2,000 tons per day could be furnished.

The price of the coal trimmed in the vessels

2
T. A. E.

would be the price as fixed by the fuel administrator, with freight, war tax and handling charge added, which at the present time totals \$6.10 per ton of 2,000 pounds f.o.b. and trimmed in vessel.

The Mobile Coal Company carries in stock at Mobile at all times several thousand tons of coal, and are in close touch with the mining section.

This business, if entrusted to us, would receive the most careful attention of the officers of this company, who are greatly interested in your plan, which, as before stated, I am sure will be most successful.

The information in the last paragraph of your letter pertaining to return cargo of sugar and molasses will be forwarded to you by Mr. Geo. E. Crawford.

Very truly yours,

T. A. E.

Vice-president.

Mobile & Ohio R. R. Co.—Southern Ry. System
Foreign Freight Department

J. S. TAYLOR
FOREIGN FREIGHT AGENT
MOBILE, ALA.
R. JACKSON
ASSISTANT FOREIGN FREIGHT AGENT
120 NORTH SEVENTH ST., ST. LOUIS, MO.
429-32 MARGUETTE BLDG., CHICAGO, ILL.

Mr Thos A Edison,
care U.S. Naval Station,
Key West, Fla.

Dear Sir:-

Replying to your confidential favor of February 12th,
addressed to Mr Geo E Crawford, Acting Mayor of Mobile:

Mr Crawford has asked me to answer your letter for the reason that I have been connected with the handling of traffic to and from Cuba for a number of years.

To be entirely frank with you, your proposition does not appear to me to be a practical one from a commercial standpoint. Your idea, however, in my judgement, is entirely feasible, if the profits to the schooner can be taken care of by either you or the Government, as suggested in your letter.

In the first place, Mobile is connected with the coal fields of Alabama both by railroads and by navigable rivers. The coal deposits in the Birmingham district are unlimited, and the coal is of excellent quality for steam-making purposes. The short railroad line Birmingham to Mobile is 262 miles. The rail freight rate from the Birmingham district is \$1.00 per ton of 2,000 pounds. This freight rate includes the cost of dumping the coal into ship's hold over coal tipples. The Southern Railway has a coal tipple at this port with a capacity for handling seven to eight hundred tons per day. The Louisville & Nashville Railroad has a tipple that

will handle about 1,500 tons per day, if the tipple is worked day and night, which can be done. The rail freight rates over both lines are the same.

During the year 1917 there was handled from the Birmingham district about 80,000 tons of coal, in self-propelled barges from points on the Warrior River, thence via the Alabama River to Mobile. The 80,000 tons was used in Mobile for ship bunkering purposes. Coal can be transported by water from the Birmingham district cheaper than by rail. The exact cost of water transportation I am unable to state, but I should say not exceeding sixty or seventy cents per ton. The barge lines, for reason unknown to me, have for the present been discontinued. It is my understanding, however, that the barges are available, and can be put back into operation on short notice.

The most serious obstacle to your scheme is finding return loads for schooners to Mobile. If the boats have to return light of necessity the cost of ocean transportation would be practically doubled. There are, however, two chances for return cargoes from Havana and other Cuban ports for schooners. The first, and most probable return cargo would be blackstrap molasses. The port of Mobile last year handled about 75,000 tons of blackstrap, principally from Cuba. This blackstrap is handled to us in tank ships, and pumped into storage tanks at Mobile. These cargoes are brought to us in ships that bring about 8,000 tons. The storage tanks at Mobile will hold about 25,000 tons. A ship with 8,000 tons can be discharged from ship to tank within ten or twelve hours. The blackstrap is moved from tanks into tank cars by a pumping process, which is a very economical way of handling it. It is estimated that the cost of transportation, even at the present high price of ships,

from Havana to Mobile, on blackstrap, is 12 $\frac{1}{2}$ per 100 pounds. This cost includes the expense of returning the ship from Mobile to Cuban ports light.

The other possible commodity to move from Cuba to Mobile is asphaltum. There is quite a valuable deposit of asphalt at Mariel Bay, 40 miles west of Havana. It is owned by British capital. The International Asphalt Company, of Chicago, at one time controlled the Mariel deposit, and imported through Mobile some twenty-five or thirty thousand tons per year, refining the asphalt at this port. About three years ago, however, the refinery here was shut down on account of some legal complications between the International Asphalt Company and the owners under the contract existing between them. It is my understanding, however, from recent information, that the refinery here could be re-opened but for the extreme high ocean freight rates now existing. Based on the information contained in your letter, I have this morning wired the International Asphalt Company, asking if they could re-open their plant here if a reasonable ocean freight rate was obtainable. I will advise you of the nature of their reply.

Referring again to the question of blackstrap: The difficulty in handling this commodity in schooners, as I see it, would be the question of returning the empty barrels. All of the schooners space under deck would be taken up with coal on return trips, and barrels could not be loaded safely on deck of a small schooner.

Notwithstanding what I have stated about the blackstrap proposition, there was handled to this port from Sagua la Grande, Cuba, on July 5th, 1917, 997 barrels of blackstrap, aggregating 329 short tons, in the Schooner DAVENPORT. This blackstrap was

distributed in barrels by rail to interior points. We now have at our docks the Schooner CHAMBERLAIN, from Manzanillo, Cuba, with 1,200 barrels of blackstrap, or 396 short tons. Five hundred barrels of this lot will be distributed to the interior in barrels. The remaining 700 barrels are now being pumped into the storage tanks at Mobile. This pumping process from barrels is an experiment, and if successful will largely solve the question of return cargoes.

I am confidentially informed that the movement of black-strap through the port of Mobile for the coming year will probably aggregate 150,000 to 175,000 tons. I furthermore know that tank ships are as scarce as other kinds of ships, and am therefore inclined to believe that a contract can be made for return cargoes of blackstrap, if the pumping process from barrels to tanks is a success. I have gone into the details of this question of return cargoes rather fully, as on this one feature rests the question of carrying out your idea to a successful business conclusion.

For your information I will advise that Mobile is the largest port of export in the United States for yellow pine lumber. Such being the case, lumber cargoes are always available, and all sailing craft are now very much in demand for the lifting of yellow pine lumber. The present lumber rate by schooner from Mobile to north side Cuban ports is about \$20.00 per thousand feet, which would be equivalent to \$10.00 per ton. I mention this feature, as the rate on lumber would have a very material bearing on your rate on coal by schooner. The schooner rate quoted, however, is based on returning light to Gulf ports in the United States. In some cases, however, the sailing boats are returning to us with cargoes of mahogany from Mexico, and logwood from certain of the islands of the

West Indies other than Cuba, such as Haiti and Santo Domingo. If cargoes, however, could be assured to schooners both ways, the cost of transportation on coal by water could be materially reduced under the present quotations.

In your letter you make reference to a reliable dealer who could promptly load and handle your schooners. In this connection I would suggest the firm of Jas Gibbons & Company. Jas Gibbons & Company are ship brokers, and were for a number of years agents for the Munson Steamship Line, which company, for the last seventeen years, has maintained a regular steamship service between Mobile and ports in Cuba, as indicated on the sailing card I attach hereto. Their former connection with the Munson Line makes them thoroughly familiar with all of the intricacies of handling Cuban traffic, both to and from the island. In addition to the experience that they have had with the Munson Line, they have been in the coal handling business for the last fifteen years, at times handling export coal, but more particularly supplying steamships at Mobile with bunker coal.

If you should desire additional information, or think that I can be of service to you in any way, I am at your command. In making this offer I want to assure you that it is purely on a patriotic basis. I am too old to shoulder a gun, which I regret. I have just passed my fifty-seventh birthday, but am strong and vigorous, and more than anxious to serve my country in any way possible. I make this statement to you feeling that the same sentiments prompt you to relieve the coal situation in Cuba.

I consider it an honor, and therefore a pleasure, to be able to address you this letter.

- 6 -

Most sincerely yours,



Copy to:
Mr Geo E Crawford, Acting Mayor,
Mobile, Alabama.

P.S.: Reese Hutchinson was my near neighbor from
infancy to young manhood, and I am very fond of him and proud
of him.

CABLE ADDRESS
DANNER
USE STANDARD FORM
(UNIVERSAL EDITION)
OR
AD. & CODES.



A.C. DANNER, President
PAUL DANNER, Vice Pres.
JAS. CHARLES DANNER,
A. R. BALL, Jr., Treasurer.

MOBILE COAL COMPANY - office
N.E. Cor. of Commerce
and St. Francis St's.

MOBILE, ALA.

Feb. 18, 1918.

Mr. Thos. A. Edison,
U. S. Naval Station,
Key West, Florida,

Dear Sir:-

In further reference to the matter of coal for
Cuba; we wrote you under date of the 15th. inst.

We now beg leave to call your attention to
the matter of a possibility of shipping coal di-
rectly from the mines in Alabama to Cuba by the Flor-
ida East Coast Line and ferry, and we have written
to Mr. A.C. Elgin, agent of the Florida East Coast Line,
in regard to this matter; though, we think that your
idea of sending the fishing fleet here to be loaded with
coal is something more to be depended on.

It, of course, would not be economical to handle
coal on such small boats; but, they would get the coal
across (particularly, if the boats were sent in a
fleet to be towed by some tugboats). They would then
make regular and rapid trips, and, if they struck bad
weather, the tugboats could let them loose and they
could take care of themselves, as they are no doubt
sea-worthy.

In this connection we will mention that there are
some really good fishing boats here for sale, the fish-
ing company having substituted steam fishing boats for
the sailers.

We have this morning letters from Havana and other
points wanting coal for Cuba.

Of course, we have not mentioned to anyone the fact
that you are interested in the matter.

Very respectfully,

MOBILE COAL COMPANY.

BY

A.C. Danner, PRESIDENT.

W.H. KNOWLES, PRES.

ELLIS KNOWLES, VICE-PRES.

HENRY M. YONKE, SECY-TREAS.

J. GREENBLAT, MANAGER

CABLE ADDRESS
"PENSACOLA"
"PRAIRIE AND SOUTHERN"
MEMBER OF
BOSTON ALABAMA COAL

CODES USED
WATKINS' AND APPENDIX
SCOTT'S, 10TH EDITION
U.S. & CANADA EDITION
WESTERN UNION
SCHIMMIDT'S

PENSACOLA MARITIME CORPORATION

Brokers for Sale and Purchase of Steamers and Sailors
STEAMSHIP AGENTS AND SHIP BROKERS
COAL FOR EXPORT AND BUNKER

PENSACOLA, FLA. February 19th, 1918.

Mr. Thomas A. Edison,
United States Naval Station,
Key West, Florida.

Dear Sir:-

We have your circular of February 18th, and
in reply beg to state that the owner of the Tug "BRITANNIA"
is open for a contract for a period of time, to move coal
from Mobile, Pensacola or any other place you would desire
to Havana. This owner has a consort barge of 800/1000tons
capacity, and he would undertake to tow/^{with} the Tug "BRITANNIA" ^{6 months or more} in
this barge above mentioned quantity of coal from a Gulf
Port to Havana. Please state what rate and for how long
a period of time you could use this tug and the said barge,
on the Government ^{form} Time Charter basis.

Yours very truly,

PENSACOLA MARITIME CORPORATION.

By

Manager.

JG:MR

February 20, 1918.

Mr. J. S. Taylor,
Foreign Freight Agent,
Mobile & Ohio Railway,
Mobile, Ala.

My dear Sir:

Your kind letter of the 16th inst. received. The information contained therein is valuable and the details you have gone into are greatly appreciated and I thank you for the same. They will be very helpful to me. I would like to know whether these smaller vessels can get insurance in the usual way. If not, it may be possible to get Government Insurance for vessels engaging in this trade.

Hutchison is as lively as ever and is doing an immense amount of work.

Very truly yours,

February 23, 1918.

Mr. A. G. Danner,
Mobile Coal Co.,
Mobile, Ala.

My dear Sir:

Your letter of February 16th to Mr. Edison is at hand. Your suggestion in regard to shipping coal directly from the mines to Cuba by the Florida East Coast Railway is appreciated, but the capacity of the road seems to be taxed to its limit at present in the transportation of food stuiffs and supplies and the plan proposed by Mr. Edison was particularly to relieve the other means and lines of transportation so that it would not in any way interfere with these already overcrowded routes, and furthermore to enable the owners of sailing vessels to use them to advantage and profit.

Mr. Edison has not the time or desire to enter into the coal and sugar business personally beyond a demonstration trip to show that it can be done and with profit, and to encourage others to engage in the trade. He has no desire to make any money out of it personally. He has even made offers to several ship owners here to guarantee all expenses and a profit of two dollars per ton and on top of that give them all that the trip brings in profit above that amount, in order to make a demonstration trip. The trouble seems to be that the owners of ships here either have other contracts or charters or cannot secure help to man their boats. They say crews are not to be had, although they are offering \$60 per month each for them.

The above being the case you can understand that Mr. Edison would not be interested in any boats for sale as he has no intention of engaging in the trade personally for profit.

He is also investigating the matter of getting return cargoes for a lot of boats that carry lumber to Cuba and return light because they can get nothing to bring back, when every boat that

-2-

Mr. A. C. Danner--Feb. 23, 1918.

can should bring back raw sugar or molasses and make full use
of the energy lost by returning light.

Your suggestion in regard to the use of tugs is a good
one and there are tug and ship owners who have of both that
ought to be interested and should get busy on this trade from
a purely business standpoint. There is unquestionably a good
profit in it.

Very truly yours,

C. P. M.
Annie E.

Hudson J.
82 Beane St.
New York City.

Why cannot your line carry
deck loads of ~~good~~ bad ~~for~~ in
bags to Havana; price wheat
30 dollars Malibit ready to ship
at Havana Seventeen dollars
This gives you good freight
business -

Yours A. Edison

Telegram to Munson Skins & Co.

Feb. 23 82 Brainerd St.

New York

Subject

Cost White & Narvaez -



Mobile Chamber of Commerce Business League

Mobile, Ala.

February
Twenty-fifth
1913

Mr. Thos. A. Edison,
U. S. Naval Station,
Key West, Fla.

Dear Sir:-

Referring to our recent correspondence I found on inquiry that Mr. J. S. Taylor, Foreign Freight Agent Mobile & Ohio & Southern Railway, was furnishing the desired information in great detail, and therefore I shall not attempt to go further into matters so far covered by him.

However, in pursuing the question of return cargoes of molasses, concerning which I wrote the C. U. Snyder Company, it appears that the Sugar Products Company, 69 Wall Street, New York City, very likely will be interested, although the Cuba Distilling Company of 40 Exchange Place, New York, is using tank steamers and probably would not be interested in the small sailing draft.

A representative of the Sugar Products Company happened to be in Mobile at the time my inquiry was received by the C. U. Snyder Company, and he expressed considerable interest, promising to take the matter up with his home office at once. Unless by reason of their close relations with Mr. Taylor, these people have no knowledge of the source of this investigation and will probably reply to me. In that event I shall of course transmit the information at once to you.

Your letter to Acting Mayor Crawford was marked confidential and I have not felt at liberty to use your name in any of my own investigations, which include inquiries made to the railroads and other concerns looking to the possible development of return cargoes.

Yours very truly,
MOBILE CHAMBER OF COMMERCE,

W.M.C.K.
General Secretary



W.M.C.K.

February 26, 1918.

Pensacola Maritime Corporation,
Mr. J. Greenblat, Manager,
Pensacola, Fla.

Dear Sir:

Your letter of February 19th to Mr. Thomas A. Edison is at hand. Mr. Edison has no idea of engaging in the coal and sugar trade personally nor has he any desire to make any money out of this trade. His sole idea is to induce ship, tug and barge owners to engage in it for their own benefit and incidentally to get coal to Cuba which they need badly and get from them sugar which is needed in the United States. His motives are purely patriotic and not personal. There is a good profit to be made and it is Mr. Edison's desire that owners of ships and barges should get all the profits. Coal can be had from the mines of Southern Alabama at Mobile or Pensacola at a low price. We have no quotations on coal at Pensacola but have at Mobile. Good quality steam coal can be had at Mobile F. O. B., including war tax, cost of loading and trimmed in vessels, for \$6.10 per ton of 2,000 pounds, and it will bring from \$16 to \$18 per ton at Havana. With the tug "Britannia" and consort barge of 800/1000 tons capacity, it seems to me that the profit it would give you should interest you in the proposition. If your barge is a covered one and protected, a return cargo of sugar or molasses could be arranged and give you an additional profit. Mr. Edison is taking up the matter of return cargoes with the United States Shipping Board and as soon as he has more definite information on the subject I will let you know. He is also investigating the question of Government Insurance.

The reason Mobile is spoken of is that the return cargo of sugar would be nearer to the refineries at New Orleans and the freight from there less than from Pensacola. You can easily ascertain what good quality coal can be obtained for at Pensacola and it might be better for you to start from there, and even return there if you could get a good market for your return cargo of sugar or molasses.

Very truly yours,

Confidential

February 26, 1918.

Mr. A. C. Danner,
Mobile Coal Co., Mobile, Ala.

My dear Sir:

Inclosed please find copy of a letter received yesterday from Mr. Horace Turner of Mobile. The contents of this letter are rather discouraging after getting your letter of February 15th and I am at a loss to know why there should be such a difference of opinion upon the subject of obtaining coal, the price, facilities for transportation to Mobile, etc.

Will you kindly let me know whether in your opinion there is any reason for the view taken by Mr. Turner. I am endeavoring to get owners of sailing vessels and barges interested in this trade and have gone upon the assumption that there would be no difficulty in getting coal, as per your letter of the 15th inst. I will appreciate your advise in the matter.

Very truly yours,

[ATTACHMENT/ENCLOSURE]

COPY

TURNER TERMINAL COMPANY

Mobile, Alabama

February 21, 1918.

Mr. Thomas A. Edison,

Key West, Fla.

My dear Sir:

-:Addison E. Bullard:-

I beg to acknowledge receipt of your confidential letter of February 18th, inviting ship owners to engage in the coal trade to Cuba.

I will take the liberty of making certain suggestions, in regard to this trade, feeling sure that you want all the information possible upon the subject. Being a Mohillian, and intensely interested in this very coal problem, I want to assist in any way I can.

1. There is no coal supply available at Mobile for the ships, even should owners desire to engage their ships in coal trade to Cuba.

2. There will be no coal supply within the next twelve months, at least, unless the Government stops in and assists in solving the transportation difficulties, viz., provides suitable barges and towboats to barge coal from Alabama mines to Mobile. The railroads have been unable to furnish coal cars and engines to move all the coal necessary for domestic and bunker purposes at Gulf ports.

3. It would be perfectly useless for ships to come to Mobile to get coal, until some agency first arranges to concentrate coal at Mobile and then to sell same to Cuba. This agency is usually the large mine operators, operating through selling agents at the ports, or Bunkering Agents at the port, who buy coal from the mines and sell the coal C. I. F. to Cuba. In other words, buy the coal, charter the ships, insure the cargo, and make the delivered price to consumers in Cuba.

The mines cannot, today, ship sufficient coal, due to shortage of cars, engines, and crews, to supply the domestic and bunker demand. The Bunkering Agents, therefore, cannot get sufficient coal to supply the local demand, much less the foreign demand. Accordingly a new source of supply must be found to satisfy the necessary Cuban demands. This supply can best be obtained by the use of joint rail and water route to Mobile. The coal can be switched, in cars, from mines near the River to the existing coal handling facilities upon the river, there the cars can be discharged upon barges, and towed to Mobile. There are some barges now available, others can be brought from other points, and the remainder must be constructed, and of wood inasmuch as steel construction is not readily obtained at this time. This

[ATTACHMENT/ENCLOSURE]

will require hundreds of thousands of dollars, and the Government alone can afford this large investment at this time.

Coal can be produced in unlimited quantities at mines upon and near the river. The present car equipment, when used only in the short switch movement between the mines and the River, can transport a great quantity of coal. The problem then is barges to move the coal to Mobile, machinery to unload barges at concentration depots at Mobile, and the same machinery to accomplish the rapid loading aboard ships, or to harbor barges if the bunker coal is to be taken aboard by the ship while she is loading her cargo at the wharf.

The Bunkering Agencies will buy the coal from the mines, sell the coal to Cuba, and charter the ships to transport coal from Mobile to Cuba, once there is a supply obtainable. The transportation between the mines and Mobile presents the real existing difficulty. This transportation is the vital link in the chain, and to supply this link will mean a large sum of money. And little relief can be expected for Cuba until this transportation is furnished.

4. Mr. A. J. Mason and Mr. David Bontecou, of the United States Shipping Board, are now investigating this very barge problem, and were in Mobile on Monday and Tuesday of this week. Their recommendations will no doubt be of considerable assistance to you in your efforts.

If there is anything that I might do at this end, in the way of furnishing information, etc., to assist you, kindly let me know.

Very truly yours,
/s/ Horace Turner
 Managing Owner, "Addison E.
 Bullard"

WM. H. KNOWLES, PRES.

ELLIS KNOWLES, VICE-PRES.

HENRY M. YONGE, SECY-TREAS.

J. GREENBLAT, MANAGER

CARL ADDRESSES
"MARITIME"
PRATT AND WHITNEY
BRANCH OF
BETT ALABAMA COAL

PENSACOLA MARITIME CORPORATION
Brokers for Sale and Purchase of Steamers and Sailers
STEAMSHIP AGENTS AND SHIP BROKERS
COAL FOR EXPORT AND BUNKER

PENSACOLA, FLA. March 1st, 1916.

CODES USED
PRIVATE
WATKINS' PRACTICAL
SCOTT'S, 10TH EDITION
A. W. S., 5TH EDITION
WESTINGHOUSE
SCHINDLER'S

Mr. Chas. B. Hunford,
U. S. Naval Station,
Key West, Fla.

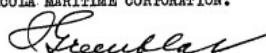
Dear Sir:-

We have your favor of February 26th, contents of which we have carefully noted. We are very much in favor of Mr. Thomas A. Edison's idea, and you may rest assured that if we can do anything to induce the tug and barge owners to put their tonnage in coal and sugar trade, along the lines indicated by you, our best will be done. Unfortunately, we, ourselves, do not own any tonnage, and only act as brokers. We are placing the facts you have given us, before the owner of the "BRITANNIA" and other tonnage, and hope to be successful in getting him interested.

Yours very truly,

PENSACOLA MARITIME CORPORATION.

By



Manager.

JG:NR

March 2, 1918.

Mr. W. M. Clemens,
General Secretary, Chamber of Commerce,
Mobile, Ala.

Dear Sir:

Your letter of February 25th to Mr. Edison has been received and the contents are noted with interest.

Mr. Taylor has been very kind and helpful in the matter. It is probable that the United States Shipping Board will take up this whole matter and that some good solution of the problem will soon be found. Some ship owners, we are informed, have begun to act and the Munson Line are now filling their spare cargo space with coal, so that the fuel is beginning to move, and with the assistance of the Shipping Board and the Food Authorities we hope that Cuba will soon be getting a good supply of coal and the United States getting their raw sugar and molasses in return.

We shall be very glad to have the report from the C. U. Snyder Company when it comes.

Very truly yours,

For Mr. Edison.

CABLE ADDRESS
DANNER
USE WESTERN UNION
(UNIVERSAL EDITION)
A.D.C. CODES.



MOBILE COAL COMPANY-

MOBILE, ALA.

March 5, 1918.

Mr. Thos. A. Edison,
U. S. Naval Station,
Key West, Fla.,

Dear Sir:-

For your information, in reference to the matter of transporting coal from Mobile to Havana, Cuba, the Munson Line, running steamers from here, weekly, to Cuba, have put into effect a rate on coal from Mobile to Havana, of \$7.93 per ton of 2240 pounds; requiring, however, that the coal we sacked.

The adding of the sacking charge, at the very high cost of sacks now, would make the price about \$4.00 per ton more, and cause the shipping of coal by this line prohibitive.

Another item which may be of interest to you is that the committee from Washington which I mentioned to you in one of my letters, has reported very favorably and strongly recommending putting in effect at once the plan of bringing coal down the Warrior River---a new

2.....T. A. E.

source of supply.

They recommend that the shipping board use two millions of dollars for this work immediately and that they establish the management at Mobile and provide here a large storage place for the accumulation of coal for supplying other ports in the gulf; but that does not provide for the ocean transportation, which is the serious problem just now, and the one that you have discovered and have been trying to remedy.

Yours very truly,

A handwritten signature in cursive ink, appearing to read "A.C. Danner".

President.

REPRESENTATIVE IN CUBA
OF THE
FOOD & FUEL ADMINISTRATIONS,
WAR TRADE & SHIPPING BOARDS
OF THE
UNITED STATES.

403 MANZANA DE GOMEZ,

HABANA, CUBA.

March 7, 1918.

IN REPLY REFER TO
FILE NO. 25

Charles B. Hanford, Esquire,
United States Naval Station,
Key West, Florida.

My dear Mr. Hanford:

Please pardon me for not having answered your letter of February 21, 1918, written by request for Mr. Thomas A. Edison, which is due to the fact that I have been absent from the City for several days and the time that it has required to make a close study of the proposition of importing Alabama coal into Cuba by means of the Cuban vessels.

There are a number of steamers and sailing vessels which would be available for this trade; a list of which I send you, herewith enclosed, on a separate sheet, and while the National Council of Defense have assured me that these boats could be placed in this traffic, I am inclined to doubt if this could be done, as most of them at the present time are engaged in carrying sugar to Mexico. Sometime ago the Shipping Board of the United States suggested that these boats be used for the purpose of carrying sugar to the United States, but the reply was that they were required for the coast wise trade.

We are, at the present time, receiving coal in such quantities from the Northern ports as to supply the demand for the Island, and the condition which existed at the time you wrote your letter does not exist now. I took up the matter of the importation of Alabama coal with all the Railways in this City, who have informed me that they would not by choice use this coal, as it was not suitable for their purpose. They stated that in former times the proposition of importing

-2-

importing this coal had been made to them and it had always been declined. Under these conditions I do not think we would be able to do anything in this matter.

Again apologizing for my delay in answering your letter, believe me

Wm. W. Morgan
Yours very sincerely,
American Consul General,
Representing American Food
& Fuel Administrations and
War Trade & Shipping Boards.

HBM-B.

Enclosure:

List of available boats.

[ATTACHMENT/ENCLOSURE]

COPY

U.S.S.Dorothea,
23 February, 1918.

VESSELS AVAILABLE FOR COAL SERVICE BETWEEN
UNITED STATES AND CUBA.

| <u>Vessel.</u> | <u>Company or Agent</u> | <u>Carrying Capacity</u> | <u>Date Available</u> |
|----------------|-------------------------------|--------------------------|--|
| Chaparra | Empresa Naviera de Cuba | 1800 tons | March 20 |
| Gibra | " " " | 1400 tons | March 20 |
| Lehigh | Compania Cubana de Navegacion | 2400 tons | Upon clearing of ice in Welland Canal. |

SAILING VESSELS.

| | | | |
|------------------------|--|-----------|------------|
| W.F.M.Bentley | J.Costa (Agent) | 500 Tons | March 20 |
| G.J.Boyce | Gulf Belt Nav. Co. (Probably other schooners of this Company) | 500 " | About 3/20 |
| Ralph M. Haywood | J.Costa (Agent) | 1000 tons | March 10 |
| Ada Tower | " " " | 1000 " | May 20 |
| J.E.Debignon | ----- | 900 " | May 20 |
| Tres Amigos (Schooner) | J.Costa | 500 " | March 1 |

NOTE: Probably a number of Honduranian schooners carrying cigar box lumber to Tampa which are now returning empty.

Dear Agents
DANNER
USE WESTERN UNION
(UNIVERSAL EDITION)
A.B.C. CODES.



A.C.DANNER, President
PAUL DANNER, Vice Pres't
JAS. C. HANFORD, Secretary
A.A.GALL, Jr., Treasurer

MOBILE COAL COMPANY

MOBILE, ALA.

March 13, 1918.

Mr. Chas. B. Hanford,
for Mr. Edison,
U. S. Naval Station,
Key West, Fla.,

Dear Sir:-

Your favor of the 4th inst. came duly to hand, but I was out of the city, which has caused this delay in acknowledging your letter.

I note that through Mr. Edison's influence that there may be a party sent down this way to examine conditions as to coal.

If this man comes here, and is sent to me, I will be glad to assist him in getting information.

In the meantime, I can assure Mr. Edison now that there is plenty of coal here and no difficulty in getting large amounts.

We can get coal from Alabama, and we can also get it from Illinois, if necessary.

I would like to suggest what is, in my opinion, the best and most practicable way of getting this coal to Havana, or other Cuban ports, as far as the ocean transportation is concerned:

(I will say that I have been handling coal here on the waters more or less for the past forty years; and I have had a long experience with it, trying many different ways).

2
C. B. H.

There should be for the proper handling of this business four large, strong, sea-going barges constructed.

Each of these barges should have a carrying capacity of 2,000 tons.

A powerful sea-going tug should be procured.

The plant would then consist of this tug and four barges.

Two of the barges should be at Havana.

Two of them at Mobile.

It should be arranged that the tug would leave Mobile with the two barges here, these barges loaded with coal (4,000 tons) and go directly to Havana.

The tug should then return at once to Mobile with the Havana barges loaded with sugar or any other kind of goods to come this way.

Of course, there should be proper facilities for unloading and loading with dispatch and economy.

This plant would put into Havana, say, 4,000 tons of coal per week, which would probably be all that would be required.

This would not only be the safest and most expeditious plan, but would be the cheapest way to handle this business.

I would say further for Mr. Edison's information (he may not have heard of it) that the reason Cuba has gotten into this fix about coal is that previous to the war the Philadelphia sugar refinery concern (a very large and strong company) ran from Philadelphia

3
C.B.H.

to Havana steamers especially built and constructed for this business. They carried coal to Havana and sugar back; and they did not permit anyone to interfere with their trade. They had, practically, the monopoly of it.

We tried years ago to do something in the way of sending coal to Havana, but we could not compete with the Philadelphia people.

The Louisville & Nashville R.R. Co. also tried to ship coal into Havana, and lost more than \$200,000.00 before they gave it up.

Now, when this war broke out and the price of steamers went up sky-high, the Philadelphia people sold their steamers, and Cuba was without any way to secure coal.

Yours truly,

A.C. Danner,
President.



Munson Steamship Line
82-92 Beaver Street,

CABLE ADDRESS "MUNSON"
WIRELESS AND AIR CO. LTD.

S B K

SB

New York

March 14, 1918

Please refer to File #

Mr. Thomas A. Edson,
U.S. Naval Station,
Key West, Fla.

Dear Sir:-

Your telegram of February 24th reading as follows -

"Why cannot your Line carry deck loads of coal in bags from Mobile to Havana price about six dollars Mobile readily sells at Havana Seventeen Dollars this gives you a good freight earning."

Received and delay in answering same has been caused by awaiting developments at Mobile. We wish to state that we do have and have had for some time a rate in effect of \$7.93 per ton of 2240 pounds on coal in bags from Mobile to Havana, including the handling charges to the trucks. This rate is even lower than the bulk rate from Newport News but the cost of bagging and the difficulties in bagging in time for making shipments without great expense seems to stand in the way. Furthermore the quality of coal is a thing that is very important.

We stand ready to carry any of this business that can be developed, to the limit of the capacity of our ships, whether on deck or under deck; first, of course, taking care of the food supplies which we are taking from Mobile.

Mr. Thomas A. Edison

-2-

3/14/18

We thank you for the interest you have shown in this
matter.

Very truly yours,

JOHNSON STEAMSHIP LINE

C. Stellogff

March 18, 1918.

Honorable M. Y. Morgan,
American Consul General,
403 Manzana de Gomez,
Havana, Cuba.

My dear Sir:

Your letter of the 7th inst. to Mr. Thomas A. Edison is at hand and I thank you for the information contained therein. Mr. Edison has been very much interested in the matter of getting a supply of coal to Cuba and also in procuring return cargoes of raw sugar and molasses to the United States.

There are, or have been, many vessels carrying lumber and other commodities to Cuba which return to the United States light, and a number have appealed for help in getting return cargoes to avoid this great waste of energy. We have taken the liberty of referring them to you and if you can give them any assistance in procuring return cargoes it will be greatly appreciated. Mr. Edison has no personal or monetary interest in the matter and has acted only for the good of the cause..

Very truly yours,

for Mr. Edison.

March 18, 1918.

Pensacola Maritime Co.,
Mr. J. Greenblatt, Mgr.,
Pensacola, Fla.

Gentlemen:

Referring to former correspondence on the subject of transshipping coal to Cuba and procuring return cargoes of raw sugar and molasses to the United States, I would state that Mr. Edison has succeeded in interesting the United States Government officials in the matter and further details should be taken up with them.

It is suggested that all matters in regard to the availability of ships should be taken up with Honorable Edward H. Hurley, Chairman of the United States Shipping Board, Washington, D. C.

The matter of procuring return cargoes of raw sugar and molasses it is suggested should be taken up with:

The United States War Trade Board, Washington, D. C.
The International Sugar Committee, Mr. George M. Rolph,
Chairman, 111 Wall Street, New York City.
Mr. H. Y. Morgan, representative for the United States
in Cuba for the Food and Fuel Administration, The
War Trade and Shipping Boards, at 403 Manzana de
Gomez, Havana, Cuba.

Mr. Edison's sole purpose and interest in the matter has been to get ship owners interested and get this trade started. In this he has been successful to some extent and his efforts have been made without selfish or monetary interest personally, but simply for the good of the cause. The matter is now in the hands of the Government and further information should come from them.

The quotation previously given you on the cost of coal at Mobile, viz: \$6.10 trimmed in vessels, P. O. B. Mobile, Ala., was furnished by the Mobile Coal Co. of Mobile, who can furnish coal in large quantities.

Thanking you for your interest in the matter, I am
Very truly yours,

Mobile

March 19, 1918.

Mr. A. C. Danner, President,
Mobile Coal Co., Mobile, Ala.

Dear Sir:

Your letter of March 13th to me for Mr. Edison is at hand. I enclose herewith a copy of a general letter sent out to all those who have responded or shown an interest in the coal proposition, which will explain the present status of affairs and also the fact that you are prepared to furnish coal at the rates we have quoted to them.

By direction of Mr. Edison I am sending a letter to-day to Mr. W. M. Clemens, General Secretary of the Mobile Chamber of Commerce, telling him that there has been almost universal complaint about the quality of Alabama coal and suggesting that the Chamber of Commerce should take steps to correct the impression which has unfortunately been brought about by some means and which if allowed to stand would do much to injure Mobile as a coal-purchasing market. I have no doubt that as your first letter to Mr. Edison was written at the suggestion of Acting Mayor of Mobile Mr. George E. Crawford and as he must be in close touch with Mr. Clemens, he will show you the letter if you desire to read it.

Again thanking you for your assistance and interest, I am

Very truly yours,

11
Clyde
March 19, 1918.

Mr. W. M. Clemens,
Gen'l Secretary, Chamber of Commerce,
Mobile, Ala.

Dear Sir:

Referring to former correspondence with Mr. Thomas A. Edison on the subject of Alabama coal, Mr. Edison directs me to say to you that there is almost universal complaint from those interested in the purchase of coal about the quality of it. In your letter of February 8, 1918, you enclosed a chemical analysis of this coal in comparison with Pittsburgh and Virginia coals which was very favorable to Alabama coal. Now Mr. Edison thinks that you should know of this complaint for evidently someone has been selling coal of an inferior quality and it has had a tendency to hurt the city of Mobile as a coal-purchase market, and he has no doubt that the Chamber of Commerce would wish to correct this. In one of Mr. Edison's first letters to Acting Mayor Crawford he said: "It is very important that the quality of the coal should be the best grade, so the Cubans will be pleased with it and help build up a trade." In a letter from Mr. Morgan, American Consul General at Havana, he says: "I took up the matter of the importation of Alabama coal with all the railways in this city, who have informed me that they would not by choice use this coal, as it was not suitable for their purpose. They stated that in former times the proposition of importing this coal had been made to them and it had always been declined." This is the most important of several such complaints that Mr. Edison has received and he feels sure that the City of Mobile, through its Chamber of Commerce, would wish to correct this impression where the facts justify it.

In conclusion I would say that Mr. Edison has interested the United States Shipping Board in the proposition and they will probably take up the whole matter in regard to transporting coal to Cuba; also the matter of return cargoes of sugar and molasses, and further information and details should come from them. Mr. Edison's interest in the matter has been solely for the good of the cause and he has had no selfish or monetary interest whatever.

-2-

Mr. W. M. Clemens--March 19, 1918.

It is suggested that all matters in regard to the availability of ships should be taken up with the United States Shipping Board, Honorable Edward N. Hurley, Chairman, Washington, D. C.

The matter of procuring return cargoes of raw sugar and molasses with:

The United States War Trade Board, Washington, D. C.
The International Sugar Committee, Mr. George M. Rolph,
Chairman, 111 Wall Street, New York City; and
Mr. M. Y. Morgan, United States Consul General and
representative in Cuba for the U. S. Food and Fuel
Administration, The War Trade and Shipping Boards,
at 403 Manzana de Gomez, Havana, Cuba.

Thanking you for your interest and assistance in the matter, I am

Very truly yours,

For Mr. Edison.

H

UNITED STATES SHIPPING BOARD
WASHINGTON

March 23rd, 1912.

Mr. Thomas A. Edison,
Key West, Florida.

Dear Mr. Edison:

Your telegram of recent date from Key West was duly received and highly appreciated by me. I immediately took the matter in hand and am still working on it.

As you are aware, practically all of the wooden sailing ships that go to Cuba carry lumber, and they are unfit to lift sugar as the insurance rates are prohibitive. Wherever a sailing vessel is fit to lift sugar, she has no difficulty, I am informed, in securing a cargo.

Practically the supply of coal for Cuba comes from the New River, Pocahontas and Berwind-White mines. I am now having an investigation made into the Warrior River field, with a view to utilizing that supply.

Renewing my appreciation of your interest and help in the affairs of the Shipping Board,

Very sincerely yours,

Edward V. Huley

**Naval Consulting Board and Related Wartime Research Papers
Subjects -- Vickers Machine Gun and Ammunition Feeder (1918)**

This folder contains correspondence and other documents relating to Edison's desire to develop a more efficient mechanism for feeding ammunition to machine guns by using hoppers or non-refillable belts. The correspondents include Edward Craig and H. W. Morgan, inventors of nail-handling machines, as well as Brig. Gen. W. S. Peirce, Lt. Col. Earl McFarlane, and other officers of the Engineering Division of the Ordnance Dept. Some of the selected items pertain to Edison's efforts to locate inventors who could work on this problem and to obtain guns and cartridges for experimental purposes. Also included are shipping documents relating to Edison's receipt of a machine gun and ammunition for use at Key West, along with other items regarding the testing of Morgan's hopper-type ammunition feeder.

Approximately 50 percent of the documents have been selected, including all items detailing Edison's personal involvement. The documents not selected include routine correspondence dealing with requests and shipments; correspondence between Morgan and the Engineering Division; oversize blueprints sent to Edison by inventors; and a report on a test of Morgan's device conducted at the Springfield Armory.

LDR #4704

TRANSFER OF ORDNANCE PROPERTY.

Form No. 14G.
Authorized June 21, 1932

From G. H. Stewart, Lt. Col. Ord. Dept. N. A., at Springfield Armory, Mass.,
to The Chief of Ordnance, at Washington, D. C.
per Quartermaster at Springfield, Mass., BY EXPRESS
in conformity with * Telos SP-799 Supply Div., dated 1/24/18, 1.S. 400, 356 (1260).
Approved by the Adjutant General, U. S. Army, Jan. 24, 1898, and issued at 1250 of 1915.

| NO. OF BOXES. | | ARTICLES. | WEIGHT. | |
|--|--------------------------|--|--|--------|
| | | CONTROLLED STORES | | |
| PART 1 | | CLASS IV | SECTION 1 | |
| 101 | In charge of storehouse. | #1 | { 1 Vickers Machine Gun, Model of 1915, No. 2451. 6 Ammunition boxes 6 Ammunition box fillers 6 Ammunition belts 1 Barrel 1 Cleaning rod. 1 Pair mittens, with asbestos palms 1 Steam condensing device 2 Water boxes | 299lbs |
| 101 | In charge of storehouse. | #3 | 1 Belt filling machine box, containing: 1 Belt filling machine 1 Belt repairing tool 24 Brass stripes, long 24 Brass stripes, short 1 Cleaning tool 60 Eyelets, medium 30 Eyelets, long 10 Eyelets, short 2 Feed lever springs 4 Feed pawl springs 1 Oil can, small 1 Pliers, pair 1 Screwdriver, large | 191 |
| 101 | In charge of storehouse. | #3 | <i>Note: Notification of shipment</i> | |
| B/L # | 312 | *This property must be accounted for on returns rendered to THE CHIEF OF ORDNANCE, U. S. ARMY. (See Page 698, 700, 701, and 1940, A. R. of 1913.) | | |
| Shows ready for shipment this _____ day of _____ | | O. S. K. _____ day of _____ | | |
| Property stored for lame. | | | | |

TRANSFER OF ORDNANCE PROPERTY.

From at
to at
per Quartermaster at
in conformity with * * Authority for transfer of the property must be shown here. See J. M. 696 and 1025 of 1918.

| NO. OF BOXES. | ARTICLES (sheet 2) | WEIGHT. |
|--|---|---|
| 100 In charge of storehouse day of #3 | 1 Spare part container 1 Tool box, containing,-- 3 Adjusting washers, thin 3 Adjusting washers, thick 2 Asbestos packings, sets 1 Bottom pawl spring 1 Bullet guide spring, with screw 1 Combined spanner 1 Dead stop plunger spring 1 Defective cartridge extractor 1 Feed box, complete 1 File, half round, 6 inch, #2 1 Filling cup 1 Firing pin and striker point 2 Front cover catch snib springs 1 Front disk cap 1 Fusee, with link complete 1 Gib 2 Gib springs 1 Hammer 1 Handle block pin 1 Lock, complete 4 Mainsprings 1 Monkey wrench 1 Muzzle gland 1 Oil can, pint 1 Pliers, pair 1 Rear cover catch spring | 100 O. S. K. day of Prepare these stores for issue. |

* This property must be accounted for on returns rendered to THE CHIEF OF ORDNANCE,
U. S. ARMY. (See Par. 698, 700, 701, and 1549, A. R. of 1918.)

Form No. 146.
Authorised June 23, 1915.

TRANSFER OF ORDNANCE PROPERTY.

From at
 to at
 per Quartermaster at
 in conformity with * *Authority for transfer of the property need be shown here. See A. R. 800 and 1525 of 1915.

| NO. OF BOXES. | ARTICLES. (sheet 3) | WEIGHT. |
|--|--|--|
| Stores ready for shipment this day of 1918 In charge of storehouse #3 | <p>1 Recoil spring, complete 1 Safety sear spring 1 Screwdriver, large 1 Slide catch spring 1 Spare part container 1 Spring balance 1 Steel drift, octagonal 1 Steel drift, round 2 Steam outlet plugs, complete 1 Trigger bar spring 1 Trigger lever spring 1 Upper pawl spring 1 Water box spanner 1 Tumbler 2 Tumbler axis pins 2 Hand sear axis pins 3 Split pins for handle block pin 1 Tension screw with handle { 1 Marine Corps Type Tripod, (Not numbered). { 1 Muzzle attachment, complete</p> <p style="text-align: center;"><i>#1 62 lbs #2 30 " #3 167 "</i></p> <p>MARK BOXES:—Government Property Special "RUSH".</p> | |
| #2—This property must be accounted for on return rendered to THE CHIEF OF ORDNANCE, U.S. ARMY. (See Form 600, 700, 701, and 1525, A. R. of 1915.) | | Prepared these stores for issue. O. S. K. day of 1918 |
| (The marks on the several packages received by the sender will be given in this space. See A. R. 800 of 1915.) | | INVOCED the 26th day of January, 1918 G. H. Stewart, Lt. Col. Ord. Dept. N. A. Comdg. By <i>T. B. Brice</i> Capt. Ord. Dept. N. A. Issuing Officer For Holder _____ |
| U. S. Nos. 1 to inc. Involved From As above. <i>V</i> | | RECEIVED the day of 1918 By <i>T. B. Brice</i> Capt. Ord. Dept. N. A. Issuing Officer For Holder _____ |
| To Mr. Thomas A. Edison, c/o Commandant, Navy Yard, Key West, Florida. | | NO SIGNATURE REQUIRED HERE Receiving Officer _____ |
| STORES received for transportation this day of 1918 Quartermaster. | | Issuing Officer's Voucher Receiving Officer's Voucher No. 431 No. _____ |

CARRIAGE DIVISION:
FIELD ARTILLERY VEHICLES
REACCANT GUN CARRIAGES
TRENCH ARTILLERY
ANTI-AIRCRAFT MORTARS
MACHINE GUNS
MOTOR VEHICLES
FIRE-CONTROL INSTRUMENTS

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
CARRIAGE DIVISION
1703 NEW YORK AVE. NW.
WASHINGTON

Jert ✓

Answer should be addressed to "Machine Gun Section, Carriage Division, 1703 New York Ave. NW, Washington, D. C."

In replying refer to No.

400,111
EMB 69

February 11, 1918.

Mr. Thomas A. Edison
504 Navy Annex Bldg.,
Washington, D. C.

Sir:

In accordance with your letter dated August 20, 1917, (CMG553.41/1) in which you state that you are desirous of conducting certain research work along lines of materiel used in the Army, I am instructed by the Acting Chief of Ordnance to request that you consider the possibilities in regard to Machine Gun Belts as mentioned below.

The present manner of supplying ammunition to machine guns is to fill long belts with ammunition taken from clips containing five cartridges each, by means of a special loading machine, which is done in the vicinity of the place where the ammunition is expended. The cost of the clips and packing, maintenance on belts and boxes, maintenance on loading machines, and maintenance on shipping cases amounts to about 0.7 cents per cartridge used, or about \$1.75 per belt of 250.

It is thought that an expendable belt can be designed which will be made of a paper or fibrous compound, loaded in the factory, hermetically sealed in tin cases, and forwarded directly to the gun. As the belts are required, the gunner will mount the case on his tripod, open it and proceed to fire. These belts will be used but once, and may be of any substance which will hold the cartridges firmly positioned in inclement weather for several hours.

The great quantities of ammunition belts and boxes which are constantly being purchased, the confusion necessitated by refilling belts in the forward ammunition dumps, the uselessness of machine guns

Mr Thomas A. Edison

February 11, 1918.

without special boxes and the inconvenience of carrying empty equipment, makes this a question of vital importance at the present time. Your co-operation will be very much appreciated and this Office will do all in its power to assist you in your investigation.

EARL MC FARLAND

Lt. Colonel, Ordnance Dept. N. A.

By: HERBERT O'LEARY

Herbert O'Leary
Major, Ordnance Dept. N. A.

DN Washington DC Feb 20 1918.

Navsta Key West Flc

12118 For T A Edison Quote there are three patentees of box
mailing machine J. B. Green--Street eleven zero nine North
Capital Avenue Indianapolis period. E Craig, St Josephs Mich
comma J J Miller St Josephs Mich, -Signed Commissioner of patents
unquote 12020

Opmav

Copy to Commandant Naval Station.
Copy to Mr T. A. Edison.

Note: Underlined words are in mutilated code.

U. S. Naval Station, Key West, Fla.,
February 21, 1918.

Commissioner of Patents,
Washington, D. C.

I asked for name and address of principal
inventor of machine for driving nails in making wooden boxes,
not mailing machine as your telegram states period I want to
utilize his experience in carrying out the feeding of bullets
to machine guns for our Government

Thomas A. Edison.

Plain English

[ATTACHMENT/ENCLOSURE]

Com Patents.

I asked for ^{name + address of} principal inventor
of Machine for driving nails
in wooden boxes, not mailing
machine as your telegram
states. I want to utilize his
experience in carrying out
the feeding of bullets to
Machine guns for our
Government.

J.C.E.

LEASED WIRE TELEGRAM
RADICODE TRANSLATION

DH-Washington, D.C. Feb 21, 1918.

Navy Radio

Key West, Florida.

For Thomas A. Edison quote: Information furnished previous dispatch
correct only word quote mailing unquote should have been quote mailing
unquote . 15021.

Commissioner of Patents

142

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

U. S. POSTAGE IS DUE ON THIS TELEGRAM
EXCEPT FOR THE FIRST THREE SYMBOLS WHICH ARE FREE.
SUBSEQUENT SYMBOLS WILL BE CHARGED ACCORDING TO THE
NUMBER OF WORDS WITHIN ITS DURATION. OTHER
CODES AND COMMERCIAL SYMBOLS ARE CHARGED ACCORDING TO
THE NUMBER OF WORDS FOLLOWING THE SYMBOL
ENCLOSURE AFTER THE CHECK.

WESTERN UNION



TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

Form 1204

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | Blue |
| Night Message | Red |
| Night Letter | N.L. |

If any symbol other than those given above appears after the check (including symbols for registered, certified, or return-receipt messages), it will be charged according to the number of words following the symbol preceding after the check.

RECEIVED AT

140J KW 159 GOVT

BETHESDA, MARYLAND, DC 20587 FEB 23 1976

WHD'S A EDISON

142

NAVAL STATION KEYEST, FLA.

I PERSONALLY SEARCHED THROUGH SEVERAL HUNDRED MAILING MACHINE PATENTS DATED AS FAR BACK AS 1860 TO ASCERTAIN PRINCIPAL INVENTOR. PRACTICALLY ALL OF THESE PATENTS CANNOT BE DISCOVERED BEING ELIMINATING SPORADIC INVENTORS THE FOLLOWING AMONG OTHERS ARE MOST PECULIAR INVENTORS OF PRACTICAL MACHINES AS EVIDENCED BY SALE TO AND USE BY GOING CONCERN: COLON MULTIPLE MAILING MACHINES COLON ELVING & CO. NEW YORK LOS ANGELES CORNA H. W. MORGAN ROCHESTER NY. CORNA C. N. GREEN HIGHLAND PARK ILLS. CORNA

EDWARD CRAIG ST JOSEPH MICH CORNA JULIUS J. MILLER ST JOSEPH MICH CORNA

Form 1204

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | One |
| Night Message | Two |
| Night Letter | Three |

If two or three letter symbols appear in one message, it means that each character is to be repeated twice or thrice respectively. Other combinations of these symbols will indicate the length of the message after the third.

WESTERN UNION
TELEGRAM

NEWCOMB CARLTON, PRESIDENT

GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

| CLASS OF SERVICE | SYMBOL |
|------------------|--------|
| Day Message | |
| Day Letter | One |
| Night Message | Two |
| Night Letter | Three |

If four or five letter symbols appear after the check (number of western union stations) it means that each character is indicated by the symbol preceding after the check.

RECEIVED AT 148J KW 155 GOVT SHEET 2

JASON H GEE IN STREET IN BOSTON MASS PARAGRAPH AVOID SHOE MAILING MACHINERY
INVENTORS ARE ECASUS COODWARD SUITENVILLE MASS OMZA WILLIAM C STEWART
LYNN MASS CONA F JOSEPH H POPE HAMILTON MASS CONA PERLY E GLASS BROOKLINE
MASS CONA F F MCQUEELEY BEVELLY MASS PARAGRAPH ALL EARLIER PATENTS
HAVE EXPIRED AND PATENTEE DEAD OR UNKNOWN UNKNOWN RELATED SOME OF
THE PROPER INVENTORS LIVE HERE AND IN VICINITY

JARVIS BUTLER

715P

DEPARTMENT OF THE NAVY.
GENERAL BOARD,
WASHINGTON.

*ammunition
Belts for
Machine CLS
Guns -*

February 25, 1918.

My dear Mr. Edison,-

Supplementing my telegram of Saturday regarding the inventor of the multiple nailing machine for making boxes:- being familiar with Patent Office procedure only to the extent of knowing that it is a long process to get any accurate information, I called on my good friend and cousin, Mr. Charles J. O'Neill of the firm Pennie, Goldsborough and O'Neill, patent attorneys, to steer me in the right direction. He was kind enough to leave his office and take me by short cuts to the actual file of all the patents bearing on nailing machinery. There were hundreds of them in several classifications including every device from that taking in rough lumber at one end and producing turnberry baskets at the other, to machines which would drive only one nail at a time in a blank.

With Mr. O'Neill's assistance I looked over the sketches and sent you the names of inventors who had perfected practicable machines which suggested a possible relationship to the purpose you have in mind. The inventions of Elmer C. Northings of Los Angeles, California, seemed to be the most simple and effective. Practically all of his inventions have been immediately assigned to the Automatic Machine Company of San Francisco.

In the process of running down the subject several patents relating to the nailing of shoes suggested a close resemblance, or at least applicability, to the machine gun principle, and I therefore gave you the names also of several such inventors. The inventions of Ernestus Woodward of Somerville, Mass., appeared to me to be the most interesting. His inventions are all assigned to the United Shoe Machinery Company. Some of these machines drive the nails in horse-shoe order in heels, while others show a marvellous control of the nails in placing them simultaneously in various positions in the sole.

Among all of the inventions were, of course, a great many of the sporadic type, most of which are probably not in use. I took as an index to the practicability of the machines, - and ability of their inventors, - their assignment to producing manufacturers.

OC.

I have talked with the Washington representative of the United Shoe Machinery Company, Mr. Frank L. Fockham, whom I happen to know very well personally, and he has given me a lot of interesting information concerning the machinery they have for various purposes. He states that all of the practicable machinery for driving nails, eyelets, buttons, etc. in connection with shoes is owned by the United Shoe Machinery Company, and that they have special experts always employed in development and improvements. If you care to have the purpose of the inquiry communicated to his home office Mr. Fockham states that the Company will be very glad to designate their most capable men in that line to confer with you at any time or place you may desire.

Yours sincerely,

Jawis Butler

Mr. Thomas A. Edison,
c/o Commandant Naval Station,
Key West, Florida.

February 25, 1918.

Craig
Mr. Edward Craig,
St. Joseph, Mich.

Dear Sir:

I understand you are one of the inventors of the modern nailing machine for automatic driving of nails in packing boxes. If this is correct I want to state that the Government is desirous of improving the machine gun in connection with the belt which serves to hold the bullets and automatically feed them to the gun. These belts are expensive and cumbersome. They have asked me to work on the problem, but I am so busy that I cannot take on any more Government work and it occurs to me that the proper person to work it out is the inventor of a nailing machine. My idea is to do away with the belt and feed the bullets from a hopper. You can probably see one of these guns in your vicinity.

If you are willing to do a little for the Government let me know. If after you have seen the gun you can make drawings, I will have the feed made to test it if it looks feasible.

Yours very truly,

[ATTACHMENT/ENCLOSURE]

February 25, 1918.

Mr. H. W. Morgan,
Rochester, N. Y.

Dear Sir:

I understand you are one of the inventors of the modern nailing machine for automatic driving of nails in packing boxes. If this is correct I want to state that the Government is desirous of improving the machine gun in connection with the belt which serves to hold the bullets and automatically feed them to the gun. These belts are expensive and cumbersome. They have asked me to work on the problem, but I am so busy that I cannot take on any more Government work and it occurs to me that the proper person to work it out is the inventor of a nailing machine. My idea is to do away with the belt and feed the bullets from a hopper. You can probably see one of these guns in your vicinity.

If you are willing to do a little for the Government let me know. If after you have seen the gun you can make drawings, I will have the feed made to test it if it looks feasible.

Yours very truly,

[ATTACHMENT/ENCLOSURE]

[ATTACHMENT/ENCLOSURE]



SARANAC MACHINE COMPANY

CAOLES
"ELECTRICAL HOPPER BASKET"
W.M. COKE

FRUIT PACKAGE, BASKET,
CRATE, BUTTER DISH, BOOK
STITCHING, JEWY FASTENING
& SPECIAL STAMPING MACHINERY

PHONE
NO. 1073
LONG DISTANCE

BENTON HARBOR, MICHIGAN

March 2, 1918

TERMS AND CONDITIONS ON REVERSE OF THIS SHEET
ARE A PART OF THIS CONTRACT

Thos. A. Edison,
U.S. Naval Sta.,
Key West, Fla.

Dear Sir:

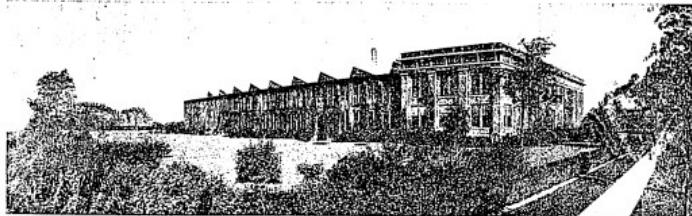
Your esteemed favor of the 25th received and I can assure you that I will be more than pleased to assist the Government in designing a satisfactory hopper feeder for machine guns.

I have designed and constructed quite a number of hopper fed machines for different work but have never had any experience in gun work. I am quite sure however that I can design and construct such a device if I could get a gun to work upon and to get all of the available information as to just what has been done in the past such as sketches, blue prints and all patents attempted along this line with criticisms setting forth why they have not been satisfactory together with suggestions that actual practise has proven would be desirable.

Should it be impossible to send this gun, would suggest sending drawings or patent papers covering the same, also advise nearest point where one of these guns may be seen.

Yours very truly,

A handwritten signature in cursive ink that reads "Edward Craig". The signature is fluid and appears to be "Edw Craig" with a small flourish at the end.



PLANT AND GROUNDS OF MORGAN MACHINE CO., BRIGHAM PARK, ROCHESTER, N. Y.

C. H. LORENZI, PRESIDENT
H. W. MORGAN, VICE-PRES. & GEN'L MANAGER

MORGAN MACHINE CO.

BOX MAKING MACHINERY

NAILING MACHINES

UNIVERSITY AVENUE AND CULVER ROAD

CABLE ADDRESS—NAGROM
ROCHESTER, N. Y., U. S. A.

March 4, 1918.

Mr. Thos. A. Edison,
U. S. Naval Station,
Key West, Florida.

Dear Sir:-

On account of my absence from the City for the last ten days, your letter of February 25th has not been answered before.

I will be very glad to do anything I can for the Government, and will look up the matter of Machine Guns and see if I can study out anything that would help. Will be pleased to report to you any suggestions that I have to offer after studying over the matter.

Very truly yours,

HWM-BG

H. W. Morgan

File No.

Inventors of
Nailing machines

Elmer
Elmer C. Northrupp }
Los Angeles Cal. } No answer

K. W. Morgan }
Rochester N. Y. } Answered
 favourably

C. H. Green }
Highland Park } Letter returned.
Ills: Unsealed for

Edmund Craig }
St. Joseph Mich. } Answered
 favourably

Jerome J. Miller }
St. Joseph Mich. } No answer

Jacob K. Greenstreet }
Indianapolis Ind. } No answer
1109 North Capitol Ave

J. H. GREENSTREET
1105 CAPITOL AVENUE NORTH
INDIANAPOLIS, IND.

Indianapolis, Ind., March 8, 1918.

Mr. Thomas A. Edison,
U. S. Naval Station,
Key West, Fla.
My dear Sir:

Your favor of the 25th, ult., was duly received, and I proceeded at once to "do my bit" by visiting Fort Benjamin Harrison, and looking over a Colt Machine Gun of new design with belt feed.

The Belt Feed I noticed was lacking in positive movement, due, as I believe, to its tendency to wrinkle and buckle. As a means to overcome this defect, I suggest a light, steel-linked chain formed into a narrow belt, say $2\frac{1}{2}$ inches wide, to be carried by the positive movement of sprocket wheels, the power being supplied by the operation of firing the gun. The links of the chain should form pockets which could carry the cartridges forward to the firing point.

I respectfully submit to you for consideration, two sketches of Hopper Feeds, showing the manner of feeding the cartridges to the gun. I prefer the one representing the feed by two hoppers. In that sketch, the right side hopper will always be supplemented by the hopper on the left, which is ready to supply cartridges to any vacant pocket which may come under it, thus assuring a continuous supply of ammunition to the gun.

The hoppers, I believe, can be kept filled by one man, and a continuous fire be kept up if desired. The chains and mechanism are durable. The chain must, of course, be as light as possible to give the necessary strength. This method of feeding eliminates the labor and time required to remove the empty belt, and to fill the belt and replace it.

I am unable to show perspective, but I trust my rough sketches with the notations will convey my idea.

Very respectfully yours,

Jason H. Greenstreet

April 4, 1918.

PERSONAL

Honorable Benedict Crowell,
Assistant Secretary of War,
Washington, D. C.

Attention of Colonel Earl McFarland, Major
Herbert O'Leary, Machine Gun Section,
Carriage Division, 1705 New York Ave. N.W.,
Washington, D. C.

Dear Sir:

In response to a letter received some time ago, a copy of which is herewith enclosed, I took up the matter with several successful inventors and I have interested a couple of them in deviving a feed to machine guns to do away with the cumbersome bolt, which also at times jams. These inventors are practical men, both having invented and introduced machines for automatic nailing of boxes and work right in line with the feeding of machine guns. A keg of nails is thrown into a hopper and the machine sorts them unerringly and nails a packing box, sometimes driving twenty nails at a stroke. Both these men have already made drawings and blue prints and submitted them to me, and if you will loan each man an old machine gun employing belts, with a belt and a supply of cartridges, so that they can make a test, I feel sure the Government will get something quite satisfactory. Both men are anxious to help.

Very truly yours,

Address reply to "Machine Gun and Small Arms Section, Engineering Bureau, Office of the Chief of Ordnance, U. S. A.,
451 Pennsylvania Avenue, Washington, D. C."

Administrator Ralff

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
ENGINEERING BUREAU
451 PENNSYLVANIA AVENUE
WASHINGTON

AMan

In replying refer to No. E S 4 0 0 . 1 1 1
119

April 16, 1918.

Mr. Thomas A. Edison,
#504 Navy Annex Building,
Washington, D. C.

Sir:-

1. Acknowledgment is made with thanks of receipt of your letter of April 4, 1918, to the Assistant Secretary of War, written in reply to letter (ES 400.111/387) from the Engineering Bureau dated February 11, 1918, on the subject of expendable bolts for machine guns.

2. I am very much pleased to learn that you have enlisted the interest of two competent inventors in this matter, which action on your part is greatly appreciated.

3. In order to thoroughly familiarize these men with the requirements which are to be met, it is felt that if possible they should arrange to visit the Springfield Armory at Springfield, Mass., at which place there is an Experimental Department well supplied with machine guns of all makes, in charge of officers expert in the operation and handling of machine guns. After their visit to the Armory they can be supplied with the two guns with which they desire to experiment, as well as any other material which might suggest itself as being useful in their contemplated work.

4. If this plan meets with the approval of the two inventors concerned, I shall be glad to be so informed so that arrangements can be consummated for an early visit by them to the Springfield Armory.

5. I shall hope to hear from you further in this matter at your convenience, and shall await your reply with much interest.

Respectfully,

W. S. FEIRRO,
Brig-General, Ordnance N. A.,
Acting Chief of Ordnance.

By:

J. H. Rice,
Brig.-General, Ordnance N. A.
J. H. Rice

gic



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PHONE
BENTON 2-51072

BENTON HARBOR, MICHIGAN

April 26, 1918

TERMS AND CONDITIONS ARE A PART OF THIS SHEET
AND ARE A PART OF THIS CONTRACT

Mr. Thomas A. Edison,
U.S. Naval Station,
Key West, Fla.

Dear Sir:

I am enclosing with this a blue print of another type of machine gun hopper. I take it for granted that the other prints I submitted in February are not quite satisfactory, however I am positive if I can get a true line on the rigid requirements of the U.S. standard machine gun that I can design a satisfactory hopper feeder.

One of the best features of this new device is being able to turn the shell carrier by hand thereby filling up the entire ring with shells before starting the gun. This would give at least 50 shots and would not fail to operate. The shells are placed in the center of the housing thru the rear.

The shell feeding pawl engages the end of the shells forcing it over into position carrying the shell ring with it, the carrier ring rides upon the shells as they project slightly below the inside diameter.

Should the above appear impractical, I would be pleased to have it criticised, also any suggestions you may have to offer.

As stated in my former letter if I could get a gun for a short time, or a full size drawing of one, I feel sure I could develop a satisfactory feeder.

Yours very truly,

May 1, 1918.

Brig-General W. S. Peirce,
Acting-Chief of Ordnance,
Engineering Bureau,
451 Pennsylvania Avenue,
Washington, D. C.

Dear Sir:-

1. Your letter of April 16th, 1918, signed by Brig-General J. H. Rice, file E.S.430.111 419, on the subject of expendable bolts for machine guns, was received by me at Key West, Florida, on the day that I left for the North. This will explain the delay in writing a reply.

2. The two inventors whose services I have enlisted in this matter are very busy men, living in different parts of the country, and I think it would be very doubtful if they could spare the time to visit the Springfield Armory at Springfield, Mass.

3. These two men are very competent and, I am sure, would be able to work intelligently if you could spare each one of them a machine gun with the ammunition bolt. Such guns might possibly be obsolete or discarded ones, so long as they were operative and capable of having the proposed improvement applied to them.

4. If it is feasible for you to supply these two machine guns with all parts, please advise me and I will communicate with the two inventors and find out the addresses to which they would like to have them forwarded.

Respectfully yours,

A/5093.

May 3, 1918.

Mr. Edw. Craig,
c/o Sennance Machine Company,
Benton Harbor, Mich.

Dear Sir:-

We have received today your letter of April 26th, enclosing a blue print of another type of machine gun hopper, for which Mr. Edison wishes me to express his thanks.

He desires me to say to you that he is quite sure you will be able to work to your own satisfaction much better if you have a machine gun with a supply of ammunition bolts. He knows what it is himself to experiment and can quite appreciate how much better it would be from your standpoint to have a machine gun so that you can take it off some quiet place and stud and experiment at your own convenience.

He wishes me to say to you that he is making an effort to get you one of these machine guns, even if it is a second-hand one, and he has every expectation of being able to obtain it.

If he is successful, in doing so, we will have shipment made to you at once, and presume it will be all right to send it to you at Benton Harbor, Mich.

Yours very truly,

Assistant to Mr. Edison.

A/5005.

May 4, 1918.

Mr. H. W. Morgan,
c/o Morgan Machine Co.,
Rochester, N.Y.

Dear Sir:-

Mr. Edeson has gone out of town again, for a few days only this time, and has asked me to write and say to you that as he is something of an expert himself he knows something about the difficulties of devising a new adjunct to an already existing machine.

He is quite certain that you will be able to make much better progress if you have a machine gun to experiment with. He is making an effort to get you one of these guns, together with ammunition belts, and has every reasonable expectation of being able to obtain this.

If he is successful, we will advise you at once and ship it to the address to which this letter is sent, unless otherwise requested.

Yours very truly,

Assistant to Mr. Edeson.

A.

24 Apr 11
28
Address reply to "Machine Gun and Small Arms Section, Engineering Bureau, Office of the Chief of Ordnance, U. S. A.,
451 Pennsylvania Avenue, Washington, D. C."

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
ENGINEERING BUREAU
451 PENNSYLVANIA AVENUE
WASHINGTON

Mart

In replying refer to No. E.S. 400.111

536

May 6, 1916.

Mr. Thomas A. Madison,
Orange, N.J.

Sir:

Your letter of May 1st, (E.S. 400.111/528),
regarding the question of developing expendable
belts for machine guns, is acknowledged, and you
are informed that it will be possible to supply
the two inventors referred to therein, with Colt
Machine Guns and their necessary equipment.

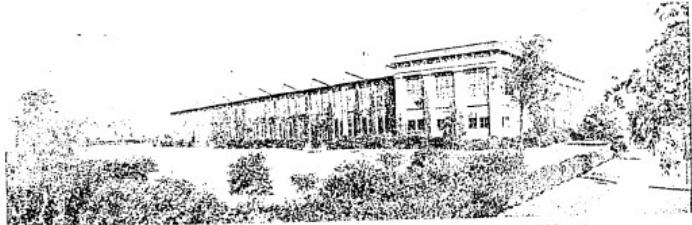
It is suggested that you communicate with
these two inventors in view of determining to which
place they wish the guns sent, and upon receipt of
the information this Office will cause the Supply
Division to express the guns.

Respectfully,

W. S. PRICE,
Brig. Gen., O.D.M.A. Acting C. of O.

By: *J. H. Price*
form J. H. PRICE,
Brig. General, Ord. Dept., N.A.

5148



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CABLE ADDRESS: NAGROM
ROCHESTER, N. Y., U. S. A.

May 9, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

Mr. Wm. Helleadowaifi,
Asst. to Mr. Edison.

Dear Sir:-

I have been out of town for a day or two and
just received your favor of the fourth.

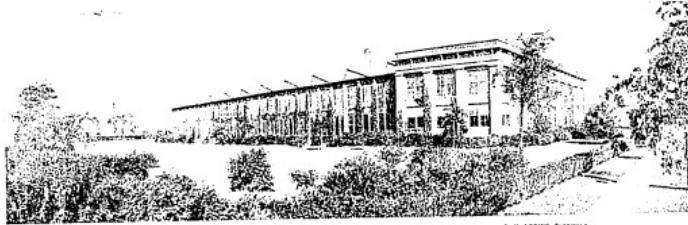
I have been making some sketches and trying
to figure out what might be a solution of the
requirements on the machine gun, but it would be
a very great help, as Mr. Edison suggests, if I
had a machine gun here to experiment with. I
have examined one but had to go to New York to
do so.

I can assure you that I will use every effort
to do anything I can to help this matter along.

Very truly yours,

HMM-EG

H. M. Morgan



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CABLE ADDRESS: MAGROM
ROCHESTER, N.Y., U.S.A.

May 13, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

Dear Sir:-

I am in receipt of your favor of the 10th.

I shall be very glad to receive the machine gun,
with belts, ammunition, etc. Will do everything
I can to try and help in the matter of which you speak.
I have been at work on this but as yet have not figured
out what might seem to be a suitable device. However,
will keep at it and use every effort to bring something
about.

You may ship the machine gun to H. W. Morgan, c/o
Morgan Machine Company, University Avenue and Culver
Road, Rochester, New York.

Very truly yours,

HWM-BG

May 14, 1918.

Brig. Gen. W. S. Peirce,
Office of the Chief of Ordnance,
Engineering Bureau,
451 Pennsylvania Avenue,
Washington, D. C.

Dear Sir:-

I received your letter of May 6th, file
E. S. 400.111 - 836, concerning the question of
developing expendable belts for machine guns, and
am pleased to learn that it will be possible to supply
to the two inventors Colt Machine Guns and their
necessary equipment.

I have communicated with these two inventors,
but thus far have received a reply from only one of
them, Mr. Edw. Craig. He would like to have the
Colt Machine Gun and necessary equipment, together
with a reasonable supply of ammunition, forwarded to
him at Benton Harbor, Mich., c/o Saranac Machine Company.

As soon as I hear from the other inventor
I will advise you, but in the meanwhile, to save time,
the above shipment can be made to Mr. Craig.

Respectfully yours,

A. B. 148.

Address reply to "Machine Gun and Small Arms Section, Engineering Bureau, Office of the Chief of Ordnance, U. S. A.,
451 Pennsylvania Avenue, Washington, D. C."

JERT

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
ENGINEERING BUREAU
451 PENNSYLVANIA AVENUE
WASHINGTON

In replying refer to No. E S 400:111
573

May 17, 1918.

Yours Craig rack
hur to let me know
where he receives
+ let us know when
he get what he
thinks is the
right idea

Mr. Thomas A. Edison,
Orange, N. J.

Sir:

Receipt is acknowledged of your letter dated May 14th (E S 400:111/552) regarding the furnishing of a Colt Machine Gun to Mr. Edward Craig, Benton Harbor, Mich., c/o Saranac Machine Company, which gun, it is understood, will be used by him in the development of expendable machine gun belts.

Shipping instructions have this day been asked from the Supply Division requesting that one Colt Machine Gun, 4 ammunition boxes, 4 ammunition belts, one tripod, a hand-book, 10,000 rounds of small arms ammunition, and such other accessories incident to the successful operation of the gun, be expressed to the above mentioned inventor.

By order of the Acting Chief of Ordnance.
Respectfully,

EARL MC FARLAND
Lt. Colonel, Ordnance N. A.

By: *F. R. Bacon*
F. R. BACON
Major, Ordnance R. G.

Address reply to "Machine Gun and Small Arms Section, Engineering Bureau, Office of the Chief of Ordnance, U.S. A.,
451 Pennsylvania Avenue, Washington, D. C."

JERT

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
ENGINEERING BUREAU
451 PENNSYLVANIA AVENUE
WASHINGTON

In replying refer to No. E S 400.111
586

May 20, 1918.

Mr. Thomas A. Edison,
Orange, N. J.

Sir:

I am instructed by the Acting Chief of Ordnance to acknowledge receipt of your letter dated May 16th (E S 400.111/577) in which you request the shipment of a Colt Machine Gun and equipment and ammunition to Mr. H. W. Morgan, c/o Morgan Machine Company, University Ave. & Culver Road, Rochester, N. Y. for use in the development of expendable machine gun belts. Shipping instructions for this have been requested and the gun will be expressed without delay.

Respectfully,

EARL MC FARLAND
Lt. Colonel, Ordnance N. A.

By: *F. R. Bacon*
F. R. BACON
Major, Ordnance R. C.I.



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PHONE
LONG DISTANCE
N.A. 1-72

BENTON HARBOR, MICHIGAN

May 23, 1918

TERMS AND CONDITIONS ON REVERSE OF THIS SHEET
ARE A PART OF THIS CONTRACT

Thomas A. Edison,
Orange, N.Y.

Dear Sir:

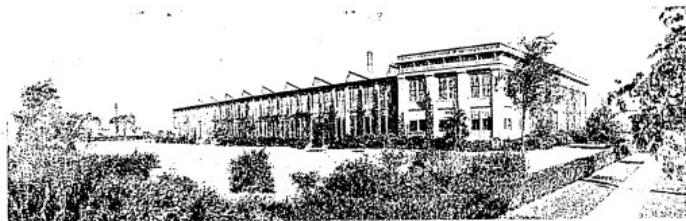
Your letter of the 14th was received, also of the 21st and I certainly appreciate your efforts in obtaining the gun for me and I hope to be able to perfect a satisfactory hopper.

I have just received a letter from the Engineering Bureau stating that they will express a Colt machine gun and 10,000 rounds of ammunition and I will be pleased to notify you when this is received by me and I will keep you informed of the progress I am making.

Again assuring you of my appreciation of your co-operation, I remain

Yours very truly,

EC LM



PLANT AND OFFICES OF MORGAN MACHINE CO., MORGAN PARK, ROCHESTER, N.Y.

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H. W. MORGAN, VICE-PRES. & GEN'L MANAGER

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CABLE ADDRESS—NAGROM
ROCHESTER, N.Y., U.S.A.

June 8, 1918.

MR. Thomas A. Edison,
Orange, New Jersey.

Dear Sir:-

You should have received
Household cartridges —
I am sure you can get rid
of the rest & just keep
The gun, with equipment, has arrived, but no
cartridges. I am writing to the Depot Ordnance Office
at Springfield, Massachusetts, asking him to send, if
possible, five hundred of the cartridges. I do not
know that I will use them, but they might be used to
advantage in coming to a decision as regards to my
being able to help you in any way. Up to the present
I have not been able to arrange any device that would
seem better or less expensive than that sent with the
gun, but will continue to give it a very careful study.

Very truly yours,

H. W. Morgan

H. W. Morgan

5280

June 13, 1918.

Mr. H. W. Morgan,
University Avenue and Culver Road,
Rochester, N.Y.

Dear Sir:-

Your favor of the 8th instant to Mr. Edison
has been received and he wishes me to say that you ought
to have several thousand cartridges. He feels sure
that you can get rid of the belt and feed cartridges
from a hopper.

Yours very truly,

Assistant to Mr. Edison.

A/5289.



E. M. LORING, PHOTOGRAPHER
M. M. MORGAN, INC., NEW YORK CITY

MORGAN MACHINE CO.
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UNIVERSITY AVENUE AND CULVER ROAD

CABLE ADDRESS: MARGOM
ROCHESTER, N. Y., U. S. A.

August 20-1918.

Mr. Thos. A. Edison,

Oakland, N. J.

Subject: Feeding Cartridges to Machine Gun.

Dear Sir:

Referring to your several communications on this subject, after experimenting on several different lines, I have succeeded in making a mechanical feeding device to feed cartridges into the gun from the original packing box, as follows.

This feeding device is placed in position on the tripod, in the grooves provided for installing the belt feed box. It is not attached to the gun in any other way, so it does not interfere with the same gun feeding belt cartridges, if desired.

The power for operating the feeding device is obtained from the one quarter inch pin that passes through the arm, near the end of the barrel of the gun, which is actuated by the explosion and returns by means of a spring. When

MORGAN MACHINE CO., ROCHESTER, N. Y., CONTINUATION SHEET NO. TWO. MR. THOS. A. EDISON.
August 20-1918.

this arm returns it trips a little pawl, which operates the feeding device.

The box holding the cartridges is an ordinary Pine box, - made special, however, for the purpose. It is intended that this box be filled at the cartridge factory and it is then ready for the gun.

It is placed on the feeding device and the gun fired in the ordinary manner. When the box is empty it is discarded and another one put in place. It takes about eight seconds to discard an empty box and place a filled one in position.

The box which I have made contains one hundred cartridges; it can be made larger or smaller, if desired.

This device feeds the cartridges successfully to the gun in whatever position of adjustment the gun may be.

I have tested the gun by firing the cartridges from the box *by* this device and insofar as I can see it does the work. *Correctly* As I am not familiar, however, with machine gun practice, I do not know whether this device is suitable or not.

Please advise me as to the next step.

I am sending a copy of this letter to Mr. Earl McFarland, Lieut. Col. M. A. War Department, Office of Chief of Ordnance, Engineering Bureau, 451 Pennsylvania Ave., Washington, D. C., at whose orders, on your recommendations, the Colt Machine Gun was sent to me for this experiment.

I will be pleased to hear from you further.

Very truly yours,

HWM/AMC

H.W. Morgan

Sept. 3, 1918.

Lieut. Col. Earl McFarland, U.A.,
War Dept. Chem.,
Office of Chief of Ordnance,
461 Pennsylvania Avenue,
Washington, D. C.

Dear Sir:-

I have just returned from a short vacation and find a letter from Mr. H. W. Morgan of Rochester, N.Y., in regard to device which he has developed on my suggestion for feeding cartridges to machine guns. In his letter, Mr. Morgan states he has sent you a copy of the letter written to me.

I am now writing to ask what the next step shall be. Do you desire to have Mr. Morgan forward to you at Washington or Aborddon, the machine gun and equipment, or will you first send up a representative to see the operation of Mr. Morgan's device at Rochester, N.Y.

Yours very truly,

A/5602.

All communications should be accompanied by carbon copy and addressed to

To insure prompt attention,
in replying refer to

No. 400.111
Attention of 935

Capt. Stanley.
S-201

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
ENGINEERING DIVISION
WASHINGTON

ARrt

September 18, 1918.

Mr. Thomas A. Edison,

Orange, N.J.

Sir:-

Referring to your letter addressed to Lt. Col. Earl McFarland dated September 3rd, MS 400.111/925, in which you state that Mr. H. W. Morgan of Rochester, N.Y. has developed a device for feeding cartridges into machine guns, I am instructed by the Chief of Ordnance to inform you that this Office has been in receipt of a copy of a letter from Mr. Morgan outlining his invention.

In order that the machine gun engineers in Washington may see this device and personally inspect it, this Office has requested Mr. Morgan to send in the attachment. It will be thoroughly examined here and then forwarded to Springfield Armory for testing, at which place it is hoped to determine its applicability for use with different machine guns and its practicability for issue in the field.

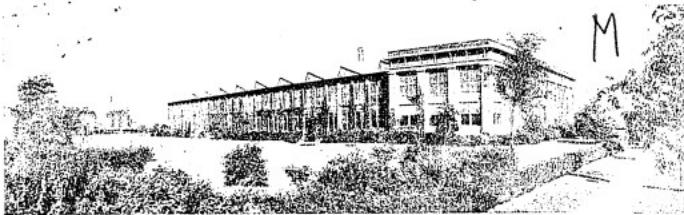
This Office desires to express to you its appreciation for the courtesy which you have extended in this matter.

Respectfully,

J. S. HATCHER,
Major, Ordnance Dept., U.S.A.

By: *G. U. Burdett*
G. U. BURDETTE,
Captain, Ordnance Dept., U.S.A.

(E5681)



PRINT AND ENGRAVED BY MORGAN MACHINE CO., WILKES-BARRE, PA.

C. H. LOWING, PRESIDENT
W. M. MORGAN, VICE-PRES. & GEN. MANAGER

MORGAN MACHINE CO.
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UNIVERSITY AVENUE AND CULVER ROAD

CABLE ADDRESS: NAGROM
ROCHESTER, N. Y., U. S. A.

September 13, 1918.

Mr. Thomas A. Edison,
Orange, New Jersey.

My dear Mr. Edison:

I am in receipt of your favor of the third. Will be very glad to hear from you or from Washington in regard to the feeding device for cartridges in machine gun which I have been experimenting with.

I sent a copy of the letter which I wrote you on August 25th to Mr. Earl McFarland, Lieut. Col. M. A. War Department, Office of Chief of Ordnance, Engineering Bureau, 451 Pennsylvania Ave., Washington, D.C., as he stated there was an urgent need for such a device when he wrote me that he had sent me the gun to work on. We have not heard from Mr. McFarland and do not know that he is the party to hear from, but inasmuch as he stated the urgent need of the Government for such a device, we sent him a copy.

I have made several tests and, so far as I can see, the feeding device works correctly. The boxes that I had made to hold the cartridges contain one hundred each but, as stated

MORGAN MACHINE CO., ROCHESTER, N. Y. CONTINUATION SHEET NO. TWO. September 13, 1918.
T.A.E.

in my previous letter, the device could be made to handle more or less. Not having a large supply of cartridges, I would put twenty, thirty or forty in a box, fire them out and change the box and the feeding device seems to handle them correctly. I believe it is a considerable advantage from fact that the box of cartridges packed at the cartridge factory is the one put into the device, without any change or manipulation.

I wrote the Springfield Armory a day or two ago and asked if they would send us five or six hundred cartridges, giving the number of the order on which the previous five hundred were sent. I wanted these to have on hand in case information came from you that officials would come here to see the device tested.

In answer to this letter I received the following telegram:

"Reference your letter to Springfield Armory, dated September seventh, requesting shipment of cartridges, this transaction will have to be either a sale to your Company or an issue to Inspector of Ordnance at your plant. Wire this office whether you wish it to be a sale or an issue."

This telegram was sent from Washington and signed "Supply Division, 34188, Army Ordnance".

I do not care whether they send the cartridges to me as a sale or an issue, but as there is no Inspector of Ordnance at our place I am a little at a loss to know just what to do. I enclose a copy of a letter which I have sent in reply to their telegram.

My anxiety is that if I can do anything to help win the

MORGAN MACHINE CO., ROCHESTER, N. Y. CONTINUATION SHEET NO. Three. September 13, 1918.

T.A.B.

war and anything to assist the Government, I am anxious
to do it as soon as possible.

Very truly yours,

H.W.M-RG

H.W.Morgan

[ATTACHMENT/ENCLOSURE]

Copy for Thos. A. Edison.

September 13, 1918.

Supply Division 34188,
Army Ordnance,
Washington, D.C.

Gentlemen:

We are in receipt of your telegram reading as follows:

"Reference your letter to Springfield Armory dated September seventh, requesting shipment of cartridges, this transaction will have to be either a sale to your Company or an issue to Inspector of Ordnance at your plant. Wire this office whether you wish it to be a sale or an issue."

I hardly know how to answer this telegram as there is no Inspector of Ordnance at our plant.

I would explain that at the request of Mr. Thomas A. Edison I have undertaken to do some experimental work relative to machine guns. On May 10th Mr. Edison wrote that a machine gun and equipment for this purpose was to be shipped to me. On May 20th I received a letter from Mr. Earl McFarland, Lt. Colonel, Ordnance, H.A., Office of the Chief of Ordnance, Engineering Bureau, 451 Pennsylvania Avenue, Washington, D.C., in which he states:

[ATTACHMENT/ENCLOSURE]

Two. September 12, 1918.

Supply Division 34188.
Army Ordnance.

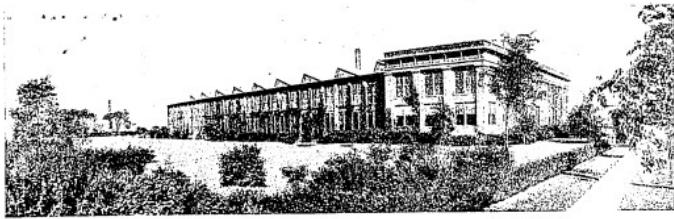
" At the request of Mr. Thomas A. Edison, Orange, N.J., I am instructed by the Acting Chief of Ordnance to inform you that the Supply Division of the Ordnance Department has been requested to express to you one Colt Machine Gun and tripod, four ammunition boxes and belts, 10,000 rounds of small arms ammunition, a handbook, and such other accessories as are necessary for the efficient operation of the gun, etc.

The gun was received on June 5th, but the 10,000 rounds of small arms ammunition was not included. Later, on June 8th, I wrote to Springfield, stating that no ammunition was received with which to make a test. I asked for five hundred rounds, which were sent me. I should have a larger supply and so wrote for five or six hundred more cartridges.

I am perfectly willing to pay for them, as this would be a very small amount compared to what I have already contributed in this work. But the chief essential is to get the cartridges here as quickly as possible.

Very truly yours,

HWM-JEG



PLANT AND LABORATORY OF MORGAN MACHINE CO., ROCHESTER, N. Y.

C. M. LORING, PRESIDENT
H. W. MORGAN, VICE-PRES. & GEN'L MANAGER

MORGAN MACHINE CO.

BOX MAKING MACHINERY
NAILING MACHINES

UNIVERSITY AVENUE AND CULVER ROAD

CABLE ADDRESS—NAGROM
ROCHESTER, N. Y., U. S. A.

September 14, 1918.

Mr. Thomas A. Edison, Subject: Feeding Device
Orange, New Jersey. for Machine Gun.

My dear Mr. Edison:

I am this morning in receipt of a letter from the office of the Chief of Ordnance, Engineering Division, Washington, J. S. Hatcher, Major, Ordnance Dept., U.S.A. (O.O. War Department, E.S. 400.111 928), copy of which I enclose.

Under the circumstances, it will not be necessary to have the additional cartridges mentioned in my letter of yesterday. The reason I wrote for these was that I thought possibly someone from Washington would come on to Rochester and test the feeding device, but as the request is to send the gun to Washington and then to Springfield Armory, I will not require the additional cartridges and have written the Department to that effect.

I will send the device with the gun, as directed in the letter just received, and trust it will prove to

MORGAN-MACHINING CO., ROCHESTER, N. Y., CONTINUATION SHEET NO. Two. September 14, 1918.
T.A.B.

be of some service to the Country. I wish to thank you
for calling my attention to this matter in the first place,
as it is a source of satisfaction even to have attempted
to do something that was wanted at this critical time.

Very truly yours,

HWM-EG

H. W. Morgan

[ATTACHMENT/ENCLOSURE]

C O P Y

War Department,
Office of the Chief of Ordnance
Engineering Division
Washington
To insure prompt attention, in replying refer to
E S No. 400.111 Attention of 928
Capt Stanley

September 11, 1918.

Mr. H. J. Morgan,
Morgan Machine Company,
University Ave. & Culver Rd.
Rochester, N.Y.

Sir:-

I am directed by the Chief of Ordnance to acknowledge receipt of your letter dated August 19th (E S 400.111/890), in which you state that you have succeeded in perfecting a feeding device for machine guns which device you have developed on a Colt gun which was recently supplied you.

In order that this arrangement may be seen by the authorities in this Office, it is desired that it be sent in to be thoroughly examined and then probably forwarded to the Machine Gun Testing Station at Springfield Armory where very careful tests will be given to determine its practicability and applicability to different guns.

Your activities are very much appreciated, and this Office wishes to congratulate you on the success which has rewarded your efforts.

Respectfully,

J. S. HATCHER
Major, Ordnance Dept., U S A.

By: G. U. Burdett
G. U. BURDETT
Captain, Ordnance Dept., U S A.

Sept. 16, 1918.

Mr. H. W. Morgan,
University Ave. and Culver Road,
Rochester, N.Y.

My dear Mr. Morgan:

SUBJECT: Feeding Device for Machine Guns.

I have received your letters of September 13th and 14th, in regard to the feeding device for machine guns, and have read the same with a great deal of interest. I feel that congratulations are due you on having developed a working device in so short a time, and trust that the Officers of the Ordnance Department will find it eminently satisfactory and practicable for use in field work.

I have written to Major Hatcher and Lieut. Col. McFarland of the Ordnance Department, asking them to make a report to me at once after the tests are made. It will be very interesting to both you and me to learn what they have to say about it.

I am heartily glad to learn of your willingness to do anything to help out our Country at this time, when it is of such great importance that we all do our best to help win the war.

Yours very truly,

A/5689.



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C. W. LORING, PRESIDENT

GENERAL MANAGER

ROCHESTER, N. Y. U. S. A.

Say that Dept had not informed you of
the results, allie I had asked. I thank you very
much & your attention although how often

ROCHESTER, N. Y. U. S. A.

Mr. Thomas A. Edison, fine, If you like send interest in
Orange, New Jersey. The improvement you might find it on a
My dear Mr. Edison: business basis, file patent at once

I presume you have received a report to perfect as these mechanical people
feeding device that I made and sent to the Ordnance Department all
for test. are incapable in this respect all
advances are made by actions

I received a report of the test, together with a letter from
from the Department, which reads:

" Referring to your letter of October 28th (Serial No. 1
(ES 400.111/1070) I am instructed by the Chief of Ordnance to inform you that the report on the results of the tests on your mechanical feeding device for machine guns, which was conducted at the Springfield Armory, has just been received by this office. Enclosed you will find a copy of this report.

You will note that the principal difficulties encountered were the failure to feed when the gun was fired at an angle, the weight of the device and the fact that it would have to be redesigned for use with the Browning gun. (The report states that at a greater elevation than sixty degrees it would not feed satisfactorily.)

As you may know, there has recently been put into manufacture form of expendable ammunition belt and box, which reduces the weight of this equipment and adds nothing to the weight of the gun.

The Chief of Ordnance directs me to thank you for having presented this device for consideration and also for your patriotic efforts.

5940

MORGAN MACHINE CO., ROCHESTER, N. Y. CONTINUATION SHEET NO. TWO. November 18, 1918.

T.A.B.

Owing to the fact that you have been put to considerable expense in developing your device, this Office feels that you are entitled to proper compensation and would be glad to have you submit a bill."

To this letter I replied:

"I am in receipt of your favor of the 4th, also the report on the machine gun feeding device which I submitted to the Department for the test. I wish to thank you for same.

I realize that the device was heavier than need be if made in a manufactured way. Would also state that, by changing the method of applying the operation, it could be fitted to the Browning Gun. Note, also, that you have succeeded in obtaining an expendable ammunition belt and box.

In regard to the expense, I will state that I have no bill to present to the Department. At the request of Mr. Thomas A. Edison to see if a device could be made without a belt, I undertook to develop this device. I am pleased to have made the experiment, and the only compensation for a work of this kind is the satisfaction of knowing that I have tried to serve my Country in any way that I can."

I am also in receipt of a letter today from the Chief of Ordnance, reading as follows:

"Referring to your letter of November 8th, I am instructed by the Chief of Ordnance to again thank you for having placed your time, experience and manufacturing facilities at the disposal of the government to conduct an experiment with the machine gun feeding device. This office also desires to thank you for having done this work without thought or desire for recompense."

I presume, as the war is now over, there will be no need of further work in this line. I am glad to have made an attempt to serve the Country.

Very truly yours,

H.W.-BG



November 21, 1918.

PERSONAL:

Mr. H. W. Morgan,
c/o Morgan Machine Co.,
Culver Road,
Rochester, N.Y.

My dear Mr. Morgan:

I am much interested in the contents of your letter of the 18th instant, from which I derived my first information of the results of the test. Although I specifically requested the Department to keep me informed of the results, I have not yet heard from them.

Let me thank you very much for the full information you have sent me. Your action throughout the entire transaction has been very fine. If you take much interest in this improved device, you might put it on a business basis by filing an application for patent and continuing to perfect the device. These Ordnance people are incapable in this respect. All advances are made by outsiders.

I think your method is the only proper one. As belts, cloth or paper, are fundamentally unsatisfactory and probably always will be.

Yours very truly,

A/5990.

DEPARTMENT OF COMMERCE

Mr Edison -

The principle of this
hopper feed for Machine gun is OK.
but the Chief objection is,
There is not room in either
the Colt or Vickers gun for the
chain which is to convey the cartridge to
the gun, & In order to use it the
gun's works ^{also} have to be remodeled.
It would be somewhat difficult
to cause the present recoil apparatus
to turn the sprocket-wheel as Mr
Greenstreet would require in his apparatus.

Wolff

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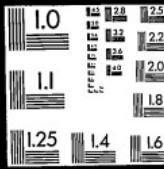
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